

SKIN DIVER

MAGAZINE

50c

June
1961
ACME



**SHARK
ATTACK!!**

DEVIL'S ISLAND DIVING

SDM TAKES A HOLIDAY

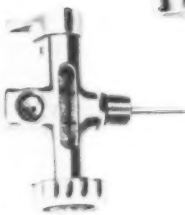
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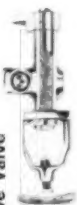
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"SJ" Portable Constant
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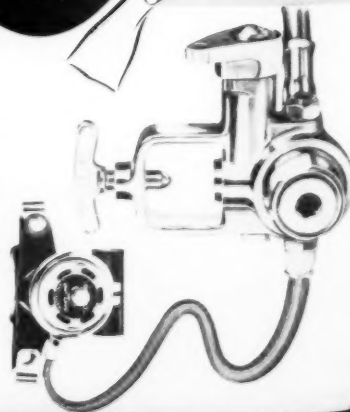
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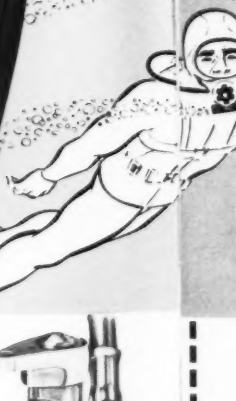
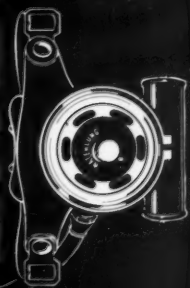
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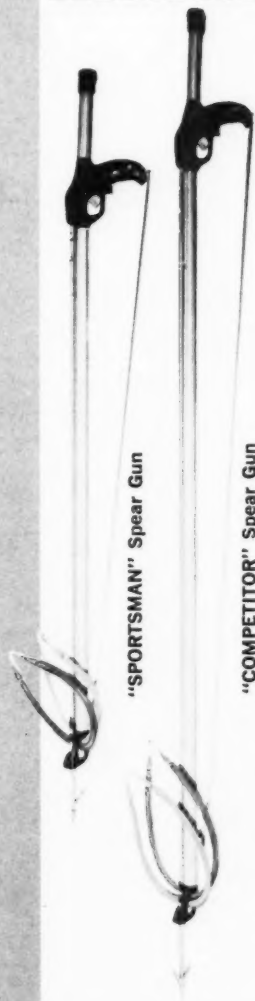
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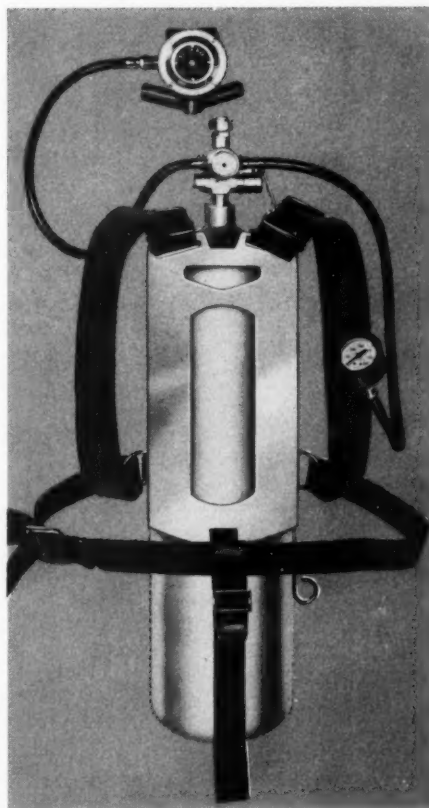


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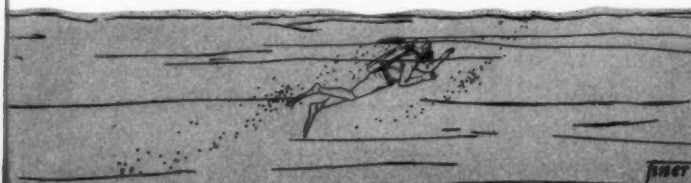
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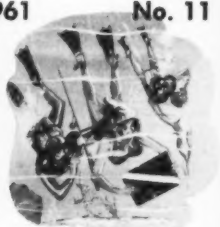
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cover

Marin skin diver Al Giddings is shown examining one of the underwater world's beautiful flowers, the sea anemone. It is actually a living animal. Photo was taken by LeRoy French at a depth of 90 feet off the Monterey, California coast.



DEVOTED TO THE UNDERWATER WORLD



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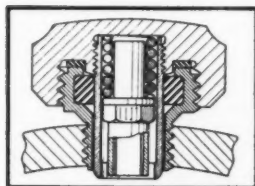


Diagram of the Rolex Oyster crown showing the two interlocking and self-sealing planes which slide together, assuring a completely water and pressure-proof seal.


ROLEX
OYSTER PERPETUAL

FREE—Rolex Skin Diver Handbook: has hand signal dictionary and decompression table. Write Dept. SCUBA, American Rolex Watch Corp., 580 Fifth Avenue, New York, N. Y.



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SDM OPINION...

YOU might think we have two main problems regarding the world championship spearfishing competitions in Spain this year, assuming, of course, that most divers are interested in our own team winning. One, getting the team there and two, and most important, winning. You would be right.

The funny thing is, it appears that the first is even more of a problem than the second. Consider this . . . four men, the very cream of a mighty creamy crop of spearfishermen will go. These four men will be the best we have to offer, and the best in the world. And in the southern part of Spain they will meet conditions almost identical to those they meet every diving day. The right depths, the right temperatures, the right sized fish . . . everything points to success. All other things being as expected, Skin Diver Magazine firmly believes that the United States will win, and that our three divers will all fall in the first five places.

If they get there in the first place. Three years ago, at Portugal, conditions were also ideal for the U. S. to win . . . but our team didn't make it through lack of funds since they are not government sponsored.

So this year they are turning to the group most interested in a victory . . . divers. They are asking that we support their effort by purchasing a one dollar decal, the decal announcing our backing and the dollar going for transportation, meals, etc. Of course immediately critics shout that the individual diver will not take the time to extend support. SDM thinks they will, and we have offered our offices as collecting point for the flood of dollar bills we know will come. When we can, for only a dollar, show the world the kind of divers we have in this country, we feel it's well worth it.

Right now its just our opinion, but it will be fact when our team wins in Spain this year.

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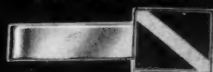
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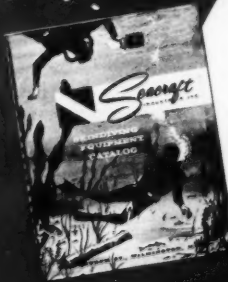
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Reader's Ripples



... I have noticed that from December to March you have seldom featured good photographs of East Coast diving, perhaps due to the fact that there is very little of interest taking place at that time. I would be interested in reading articles on what was done during the summer months in this area. The picture shows myself and a 51 pound striped bass shot in Rhode Island.

Arnold Norman
8325 Bryan Hall
Michigan State University
East Lansing, Michigan

East coast divers/writers present type-writers.

... I am stationed at Torrejon AFB, Madrid, Spain, and am looking for someone in this area to dive with. I would appreciate information on diving in this area and in Italy.

S/Sgt. Jimmie D. Miller
3970 Matron, Box 434
Torrejon AFB, Madrid
Spain

... I am fourteen years old and would like to know how I personally can promote the Divers Flag. I would also like to correspond with other divers.

Norman Littig
1303 Edgehill Dr.
Madison 5, Wisconsin

Individually, the best thing to do is display the flag properly to promote it.

... I just read Ellsworth Boyd's article "Cuda Bear" in the April issue and think it was very enjoyable. But he gave the impression that 'cudas are rare in Florida. I have yet to go diving that I haven't seen at least one.

Jay McCampbell
West Palm Beach, Florida

Mr. Boyd didn't mean to say that 'cudas were rare in Florida but only that "Cuda Bears" were rare. This is a very large barracuda.

... The two men pictured on page 18 in the April issue are to be congratulated. Assuming that John Righter is using what he appears to be using, a single 70, he has managed to give that amphora enough of his air to raise it off the bottom. Too bad the person who took this picture didn't tap him on the shoulder and ask him how he managed 140 feet on a single 70 and raise the amphora, too. But then the rainy weather here makes a cynic of most of us in a short time.

Bob Garant
1036 Cardero
Vancouver 5, B.C.

Cheer up! If you'll look closely you'll stop worrying about Mr. Righter making it to the surface after raising the amphora. It appears to us that he is using exhausted air to fill the jug, not air directly from his tank. In any case, he has ample air to make the amphora buoyant directly from his tank and still survive the trip. Mathematics will prove this if you have more space than this to work it out.

... Regarding color of equipment and visibility versus attraction, the question is which is the most dangerous, a buddy with "buck fever" or a hungry barracuda?

Rod Simmons
936 Byron Rd.
Columbia, South Carolina

And the battle wages on. You might check our February issue and "What Color Suit?"

... You stated that E. Falco, A. Novelle and C. Olgin recently dived to 429.68 feet. Was this dive carried out in a water test tank or in open water?

Thomas Stack
9035 N. Mason Ave.
Morton Grove, Illinois

The dive mentioned was carried out in open water. More recently, Hannes Keller's deepest dive of 820 feet was accomplished in a pressurized water tank in France.

... As an amputee, I would like to hear from any of your readers who have this problem or know of anyone who has it, and has kept away from diving because of it. Underwater I can move about as well as any diver and I would be happy to help anyone who would care to write.

James B. Howard
R. #2, Prior Lake, Minnesota

See Personality Spotlight page 21.

... I have just recently discovered "Skin Diver Magazine" and enjoy it very much. Could you tell me what kind of a motor is used in the small, underwater portable submarines or towing devices?

Peter Slobodzin
1000 River Ave.
Fort William, Ontario, Canada

Small subs and towing devices are generally battery powered.

... Our club here in Live Oak and Jasper has been organized about one year and like most clubs we needed to supplement our treasury. In casting about for ideas our club treasurer came up with one which everyone voted for wholeheartedly; sponsoring an underwater movie. Our club voted to contact Stan Waterman of Princeton, New Jersey, and make arrangements to sponsor his movie "Water World." We, of course, were after money in our treasury but we yielded a bigger benefit than just money for our club. Mr. Waterman's program really helped us in our public relations department. In looking back I thought it would be a good idea for us to let everybody know of the interest such films will create, so if your club is casting about for new ideas try movies, it's a lot of fun and besides you get to see a good diving picture to boot.

Robert C. Brown, Secretary
North East Florida Society
of Diving Clubs
Live Oak, Florida

(Continued on Page 10)

Cornelius AIR COMPRESSORS

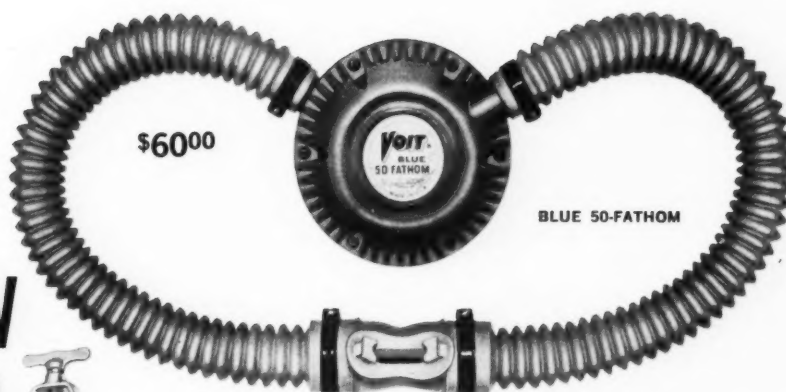
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NEW VOIT EXPLORER II. Now, in a modestly priced regulator, you can enjoy top performance. New, rugged, all brass first stage, no finer quality is used in any regulator! New, precision, tilt-valve type second stage; easy-flow orifice design for easier breathing. Less-fatigue angled mouthpiece, chin rest and neck band. Canted ports exhaust bubbles away from face. Positive purge button. Voit Blue "Cyclocac" case; chip-free, color completely impregnates the material. A safe, durable regulator that will give long and satisfactory service. **NEW VOIT EXPLORER II, VR4 \$35.00.**



IMPROVED VOIT 40-FATHOM, VCR1—This popular two-stage model now gives you even greater value! New positive purge button. New forged brass second stage. New, more powerful lever mechanism. You get initial airflow easily, yet have great maximum air flow capacity that makes the 40-Fathom suitable for professional use.



VOIT 50-FATHOM, VCR2—FINEST OF ALL. The Voit 50-Fathom is the standard by which all other regulators are judged. Compensated. Easiest breathing at any depth. Minimum working parts for safety and ease of maintenance. Chrome plated case.

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NEW

Scientifically
Designed

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WITH OFFICIAL DIVERS FLAG
IN WATERPROOF PLASTIC



- COMPACT
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Bright Yellow
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For Use In Fresh and Salt Water



Patent Pending

COLLAPSIBLE

to 8" for storage or carrying

OPEN 54" overall length

A **MUST** for ALL Skin Divers

Plastic Floats **\$6.95**

Seamless Copper Float **\$9.95**

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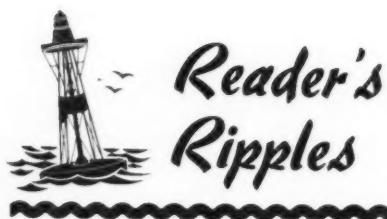
Safety Float Corporation

35 SOUTH 5th STREET, WATERBURY, CONN.

Ship To _____
Name _____
Address _____
City _____



- ☐ Check
☐ Money Order



Reader's Ripples

(Continued from Page 8)

... My son wishes to attend a camp in Florida this summer that features supervised skin diving. Would some of your readers know of such a camp?

Virginia Popwell
1946 Sweetbriar Lane
Jacksonville 7, Florida

... We are trying to locate only 12 excellent 35mm color transparencies of very colorful tropical coral reef underwater scenes preferably showing some colorful fish. We are not interested in divers being in the scenes.

If you cannot supply these slides, could you recommend a source?

Robert M. Williams, President
Natural History Exhibits, Inc.
84 Oriole St.
New Orleans 24, La.

... Is there anyone planning an expedition now or in the future? If there is someone planning a small scale or large scale expedition for any purpose that would require diving, I would appreciate it very much if you would write as I would like to join such an expedition.

Ken Reid
1116 Pearl
Modesto, California

... I would like to correspond with divers, professionals and amateurs alike, who are frequently dissatisfied with the results of their underwater photography. Please review briefly the inadequacies of your present equipment and mention some of the features you would welcome in an optimum system. How many readers of "Skin Diver Magazine" are interested in or would make use of an underwater photography clinic. The clinic would receive, evaluate and offer possible solutions to your photographic problems. The clinic would hold monthly or quarterly contests and offer as prizes scuba equipment.

Ronald C. Bates
Clearview Road
Purdys, New York
(Westchester County)

... Perhaps a small group of us, from the Austin Y.M.C.A., of Chicago, Ill., may have set a new high-low record the last weekend of February 1961. One 10 year old lad and a 66 year old grandpa.

Seven of us went to my cabin on Crystal Lake, near Wautoma, Wisconsin, about 200 miles northwest of Chicago. After cutting a 3' x 3' hole in 20" of ice over 42 feet of water, we got into our gear and proceeded to take off in pairs, each with a line securely tied to his left wrist, his team-mate on top of the ice, tied to the other end.

Yea, a lotta folks say "they are crazy." Well, crazy or not, old or not, I've never enjoyed any sport one tenth as much. Sure I'm 66 years of age, but that doesn't mean I'm going to pass up the greatest sport going. I received my scuba outfit last year for my 65th birthday.

L. M. Avenson
5728 N. Austin Ave.,
Chicago 46, Ill.

... When I read the article "If A Heart Stops Beating" in the April edition of SDM I noticed quite an error. "Meanwhile, Burkendine knelt at Bish's head and began mouth-to-mouth breathing, to force oxygen into Bish's lungs..." This is biologically incorrect, for the purpose of mouth-to-mouth breathing is to force carbon dioxide into the blood stream to the medulla of the brain. This excess of CO₂ in the blood results in the reflex of breathing caused by the medulla.

Bruce Wright
2825 W. 28th St.
Brooklyn 24, New York

We must take exception to Mr. Wright's statement and are backed by our medical expert, who says, "cessation of breathing due to heart attack leaves a normal amount of CO₂ in the bloodstream (and medulla) and if breathing was going to be triggered, it already would have re-started. Reason for respiration was to force oxygen into lungs and bloodstream."

... I hope you can end my search for a diving partner. Anyone interested in a diving companion can contact me at my address.

Walter Kaden
317 E. 96th St.
Brooklyn, New York

... Most clubs around here have a minimum age of 21 and the others are for people 17 and under. At 19, this leaves me in the middle. Any clubs interested, please contact me.

Bob Kuschenbaum
820 Michigan Ave.
Miami Beach, Florida

... I have come across two D.A. Regulators here that were overhauled in Florida. They cost approximately \$32.00 for the work and should have been set between 100 and 110 pounds. One regulator was set at 63 pounds and the other at 150 pounds. Horseshoe screws were inaccurate and corroded in acid. In one the complete high pressure nozzle was bathed in acid, something that should never be done. The other case was bent so that the low pressure diaphragm could not work properly. Divers using these regulators as they were, at fifty feet, would have had a 50/50 chance of survival.

H. Glen Spence
818 Tatum St.
Woodbury, N. J.

... I would like to know the exact location of the "Prins Willem V."

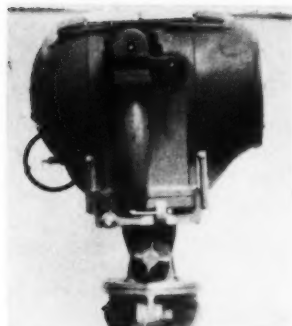
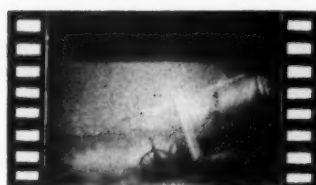
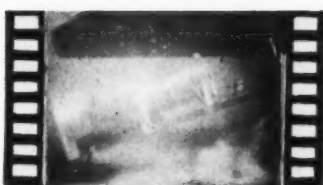
Kenneth Reis
1305 N. 19th St.
Milwaukee 5, Wisconsin

Prins Willem V is 3.8 miles off the Milwaukee harbor entrance, exactly due east from the breakwater light. It is 31 feet to the highest point on the ship, 82 feet 6 inches to the lowest point.

... I would like to tell you of the Submarine Rodeo sponsored by the Pleasant Lake Lions Club at Pleasant Lake, Indiana. It has been held the last two years. Last year 85 skin divers entered the events. After the contests are over, all of the divers try to catch my three-man six ton submarine. Trophies and prizes are awarded. Contest is July 9.

B. L. Dickman
R. R. #3
Auburn, Indiana

(Continued on Page 12)



ORGANIZATIONS lacking field experience and hence unable to think through problems of underwater operations are telling their customers that their camera and TV housings can be used without pressurization. They have totally failed to grasp the fundamental reason for pressurization. They are jeopardizing thousands upon thousands of dollars worth of fine equipment in the hands of customers who accept their statements.

Just think how you would feel if your fine Bolex, Bell & Howell or Kodak M. P. Camera got a saltwater soaking just because some foreign material got caught as you closed your housing and salt water flowed in instead of harmless air bubbles flowing out. If you care about your camera, pressurize every time you put it under water—even fresh water only inches deep. It pays to deal with an organization that knows these things and guides you right, the first time.

The solution is so easy. Just install a tank valve in your housing at any convenient point and pump in a little air before submergence. Do it every time faithfully, lower the housing a few inches, then watch for bubbles, if there are none go on down with assurance. Counter-pressure is seldom needed, but when it is, you can safely take your camera deeper with it. But remember the real reason for pressurization is to check for leaks and find them before damage occurs.

Don't accept advice from ignorant organizations — contact

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ARDMORE, PENNA.
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You'll never be "at sea" about depth or direction with one of these new Taylor Combination Depth Gage and Compasses on your wrist. Luminous pointer and markings in 5 foot divisions to 140 feet. Accurate to within 2.8 feet. Liquid-filled compass has directional line on dome that may be positioned for greatest convenience. Green rubber case 2" in diameter. #2060, \$15.95. Also: Taylor Depth Gage #2059, \$10.95... Compass #2959, \$6.95... Thermometer #5282, \$2.50. Taylor Instrument Companies, Rochester, N. Y., and Toronto, Ontario.

Taylor Instruments
MEAN ACCURACY FIRST

Reader's Ripples

(Continued from Page 10)

... SDM has already brought me enjoyment for two years. In every issue I discover several excellent articles and photos.

I belong to a diving club and every summer we make interesting trips to some districts, where old wrecks and young mermaids can be found.

If anyone would like to know something about diving in Finland, just write.

Reino Lehtinen
Kadettintie 18 A 12
Helsinki, Finland

... I plan to do some diving in Colombia, South America this summer and am looking for information on equipment, etc. Any letters will be greatly appreciated.

Bill Gilmer
13300 S. W. Fielding Rd.
Lake Oswego, Oregon

... Referring to "Boating Suggestions" in April, I think Mr. Richmond is wrong. The anchor rope is slanted away from the boat, therefore you could not tell exactly how deep the water is.

Brian Hodgson
1541 Merrow Rd.
Ontario, Canada

Strictly speaking, you're right Mr. Hodgson. The reason this suggestion was chosen was that it was a handy way to tell depth with the line straight down, not at normal anchor.

... I would like to see photographs and descriptions of foreign equipment. I know their diving equipment looks more complicated and better built than ours. I would like to hear from other divers who own such equipment.

Dick Millard
227 Lake Avenue
Saratoga Springs, New York

Some foreign diving equipment is distributed in this country where there is a possibility it might be as good as our own. The rest, including lungs which admittedly do not come up to our standards, would not sell here. Also, many makes, including our own, are distributed world-wide.

... This August I intend to dive in the Pacific off California. I would like to hear from divers in that area concerning water temperature, need for a wet suit and where I can find a diving buddy.

Dave Krauel
254 Stanley Dr.
Waterloo, Ontario, Canada

Write California dive shops advertising in this issue for weekly scheduled boat trips to offshore islands and other diving activities.

... I am near sighted and cannot read the large letters on an eye chart from eight feet. I have remedied this problem very well by using a "Cyclops" mask made by U. S. Divers Co. There is no more fogging than with an ordinary mask. The size and distance while using this mask is altered and objects appear to be smaller and further away than normal rather than larger and closer as with an ordinary mask. I think many divers can remedy their visual problems by using a "Cyclops" mask.

Carl E. Waltman, Jr.
203 Willis Ave.
Medford 55, Massachusetts

(Continued on Page 14)



HAVE YOU READ

dive

THE COMPLETE BOOK OF SKIN DIVING

- **SEA**—authoritative information on the sea and marine life.
- **SPEAR FISHING**—all phases and techniques.
- **AQUA-LUNG**—complete coverage; detailed line drawings of regulators and valves; trouble-shooting.
- **SAFETY**—how diving accidents happen and how to prevent them.
- **EQUIPMENT**—description and history; modern equipment listed with price and places to purchase.
- **PHOTOGRAPHY**—informative text and illustrations.
- **CLUBS**—complete, up-to-date list, with state and local spear-fishing regulations.
- **BUILD IT YOURSELF**—full details of equipment you can build yourself.

by **RICK and BARBARA CARRIER**

420 illustrations
A **WILFRED FUNK, INC.** PUBLICATION

MAIL THIS COUPON

Funk & Wagnalls, Inc., Dept. SD-661
153 East 24th St., New York 10, N. Y.

Please send me a copy of DIVE. After 10 days I will either send you \$4.95, plus a few cents postage, in full payment, or will return book and owe nothing.

Name _____

Address _____

City _____ Zone _____ State _____

(Send \$4.95 with this coupon. We will pay postage. Same return privilege and refund guarantee.)



SCHOOL IS OUT...

And skin diving is a boy's sport!

Parkway has created a boy's suit which combines the finest features of Parkway men's suits with a special design for boys.

Available in many styles, all Parkway boy's suits feature perfect body contoured fit, high trousers for double thickness body coverage with jacket, and heavy duty zippers with extra wide mildew proof tapes.

Check these additional features:

- Zippers double sewn and backed with wide neoprene • Contoured sleeves • Contoured legs
- Bib hood • 400% stretch neoprene • 1/4" or 3/16" skin two sides • Double backed non-corrosive snaps • Repair kit • Powder pac • Zippers available on legs and sleeves • Boots and gloves optional

Whether you dive for treasure, or dive for leisure, Afford yourself the added pleasure of a Parkway suit.



Style B 500 Chest high trousers



Style B 100 Full suit

Style 200 Women's

Style 800 Men's

Free repair kit

Women's tunic

PARKWAY *fabricators*

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South Amboy, New Jersey



Can you
identify what
these skin divers
have found?



Probably not, until you read Captain
Ted Falcon-Barker's chronicle of
the fascinating skin-diving
expedition of the "Pagan II."

1600 YEARS UNDER THE SEA

An Adventure in Marine Archaeology

This ancient Greek relic is one of the many exciting archaeological treasures that Captain Falcon-Barker, his wife Bel, and their crew, skin-divers all, found on their pioneer attempt to reconnoiter the long-sunken Greek city of Epidauros, in the Adriatic Sea off the Dalmatian Coast.

Veteran skin-diver or new enthusiast, you will be enthralled by the story of the Falcon-Barkers' voyage in search of the drowned city, and what befell them when they found and explored it. (Their undersea exploration won them an official citation from the Yugoslav Government.) Be sure not to miss this unique adventure — and the dozens of superb photographs that illustrate it. Send for 1600 YEARS UNDER THE SEA by Captain Ted Falcon-Barker. Use this convenient coupon.

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Please send me Captain Ted Falcon-Barker's 1600
YEARS UNDER THE SEA, illustrated. (\$4.50).
I enclose check ☐ money order ☐.

Name _____

Street _____

City _____ Zone _____ State _____



Reader's Ripples

(Continued from Page 12)

... Due to the fact that we have over 100 lakes in this area laws were passed to the effect that all boats are required to stay at least 300 feet from any displayed Divers Flag. We weren't organized, but four months and we got this law passed. If it would be possible, we would like to let the other divers know this. We would like it also to be known that, by June there will be an air compressor here. One that can fill your tanks 15 cubic feet a minute. We would like to see more divers in this area. Our lakes have a lot to offer, history, and depth if it be your fancy.

Mrs. Joan A. Barker, Secretary
The Sierra Aqua-Fins
Plumas County Diving Club
P. O. Box 870
Chester, Calif.

... We would like to announce our location and attract divers here when they are in Europe. Visit us at the Kaaymnot Yacht Club.

Anthony Calojannis
Mayor
Kalimnos, Dodecanese
Greece

... Would one of your readers or advertisers know of the availability of a remote controlled TV guided submarine robot that can do useful work in deep water?

Wilson Sidelmker
18 Lowell Rd.
No. Reading, Mass

The U. S. Navy is working on several remote submarines. You might contact them.

... I would like to build a sea sled for this summer's use, but do not have a design available. I am wondering if you or one of your readers might have a plan for a home built sled.

Paul Lamoreaux
3750 Raven S.W.
Grand Rapids, Michigan
Don Morrier
4850 Madison Ave.
Montreal, Canada

... I have been trying to learn something about bow and arrow fishing underwater. I have literature that indicates there is some success to be expected from this sport and would appreciate correspondence, advertising material or any other communication from anyone who has tried this.

Mildred Clarke
4816 Palomino Lane
North Highlands, Calif.

... Since Diving News has been on the market, I've noticed that there is no more Diver's Bulletin Board in SDM. What gives? Since I'm located off the beaten path and the only ones who get the paper are dive shop dealers (none in this area) I'm sunk. Put Diver's Bulletin Board back, please.

Duke Grable
Box 65a
Kelseyville, Calif.

All subscribers to SDM, plus all members of the Underwater Society of America, should automatically be receiving their copy of Diving News. If not, let us know. There is no additional cost for this service to any subscriber, new or old.



Pearl Divers Awards Banquet

Lieutenant Leonard Leo, Assistant Repair Officer and Communications Officer of the Pearl Harbor Submarine Base, Pearl Harbor, Hawaii, was named the "Outstanding Diver of the Year" at the annual banquet of the Pearl Divers Club held recently.

President of the Submarine Base sponsored SCUBA club, Lieutenant Leo was awarded the "Outstanding Diver" perpetual trophy for his proficiency as a diver, his attitude, sportsmanship, and his contributions to the club.

Lieutenant Leo joined the club two years ago and has served as president for two six-month terms, starting in April of last year. A strong advocate of the club's extensive training program, he can be constantly found indoctrinating new members in the club's safety program.

According to his associates, Lieutenant Leo's enthusiasm, leadership and dedication to the club has gained him the title "diver's diver."

Glossary of Diving Terms Explained

Letters from readers who heard about, but did not get a chance to read, our SDM opinion of some months ago have requested we once again review a few commonly accepted terms of our sport. "Skin Diving," for example, covers the whole of diving except when connected in some way to the surface. Thus helmet diving, with its dependency on surface aid, would not fall under the classification of skin diving.

The term skin diving is broken down into two sub-classifications, one "Snorkel" and the other "Scuba." Skin diving with snorkel is, of course, diving without the aid of a breathing device. Skin diving with scuba naturally follows as diving with such a device, or as the initials imply, Self-Contained Underwater Breathing Apparatus.

So we are all Skin Divers and as Skin Divers we can either use snorkel or scuba ... or both. We are, in either case, completely unattached from the surface and in no way dependent on surface aid for air. We either dive by holding an air supply within our body, or we carry a supply on our back.

The other terms discussed in the SDM opinion previously mentioned were noted only because of their ambiguity. "Free diver" falls into the classification, as does "Sport diver," "Lung diver," and a few others which are used in the conversation of those who prefer to label our sport with colloquial nicknames. Regardless of whether we depend on physical lung power or self-contained breathing devices, we are all Skin Divers.

Of course in each sub-classification we can specialize. We can "cave dive," "boat dive," "ice dive," "beach dive" and any number of other recreations, but still we are Skin Diving as long as we descend beneath the surface without a surface air attachment.

It was for these reasons that "Skin Diver Magazine" was so named ... to represent each of us, regardless of preference.

2ND ANNUAL *Glasspar* GAME FISH DERBY










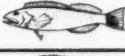


WIN THIS GLASSPAR

Here's a diver's dream come true . . . the Glasspar 16' Avalon (L.O.A. 15' 10"). Ideal for every kind of water sport . . . and with plenty of room for a party of divers and their gear. Made of low maintenance fiber glass . . . vinyl upholstery . . . safe double bottom flotation. One of the world's most popular runabouts from the world's largest manufacturer of fiber glass outboard boats. Divisions in: Santa Ana, California; Olympia, Washington; Sherman, Texas; Nashville, Tennessee; Sturgis, Michigan; and Colonial Heights, Virginia.

THE GLASSPAR GAMEFISH DIVING DERBY. Here's all you need to do to enter and win a GLASSPAR 16' AVALON. Using any kind of skin diving equipment and any kind of spearing device you choose, you must single-handedly take a fish in the species

listed (see graph). Each species is evaluated by points determined by multiplying the weight of the fish by the number of points for your species. Fill out the application below and attach it to a photograph of yourself and the fish. Have your entry signed by a GLASSPAR dealer or a dive shop operator. (The photo of the winner will appear in SKIN DIVER Magazine.)

Send the application and photo to GLASSPAR COMPANY, Executive Office, 19101 Newport Ave., Santa Ana, Calif. The most points for a single fish wins. The contest is limited to the continental limits of the United States and runs from May 1 to July 30, 1961. Your entry must be postmarked between these dates. In case of a tie in points, the entry with the earliest postmark wins.

YELLOWTAIL 12 points per lb.		SHEEPSHEAD 20 points per lb.	
WHITE SEA BASS (or Striper) 7 points per lb.		BARRACUDA 20 points per lb.	
GIANT SEA BASS (or Grouper, Jewfish) 1 point per lb.		CARP 30 points per lb.	
BONITO (or Mackerel, Tuna) 20 points per lb.		LING COD 8 points per lb.	
SNAPPER 8 points per lb.		TAUTOG (or Blackfish) 30 points per lb.	

GLASSPAR ENTRY BLANK

ENTRY MUST BE SIGNED BY EITHER A GLASSPAR DEALER
OR A SPECIALTY DIVE SHOP OPERATOR.

NAME

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CITY STATE

GLASSPAR DEALER

DIVE SHOP OWNER

FISH WEIGHT & SPECIES



You'd have to be a fish to be more comfortable!

The **NORMALAIR** Underwater Breathing Set lets you do everything a fish can do—and talk as well. This set is really the most—most convenient, most complete, most safe—because it's designed and manufactured by one of the world's largest producers of breathing and air control equipment.

Amateurs and instructors alike rate **NORMALAIR** tops for underwater safety and pleasure. Here are just a few of the reasons:

- **UNDERWATER SPEECH**—special diaphragm allows oral contact. Ideal for instructors, as there is no need to surface to speak
- **FULL FACE MASK**—for excellent vision, safety and natural breathing. You keep warm and comfortable
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- **UNCRUSHABLE AIR SUPPLY TUBES**—can withstand 10,000 lbs. pressure
- **CONVENIENT WEIGHT POUCH**—contains ten 1 lb. discs

Other standard features include:

Wide-vision vizor • Quick-release harness mechanism • One-handed ballast adjustment Fully adjustable harness • Finger tight pressure connections • Comfortable, contoured back plate • Single or twin cylinder adaptions • Pressure gauge supplied as standard • Stainless steel cylinder straps • Comprehensive instruction manual • Complete range of accessories and optional equipment.



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OVERSEAS OBSERVATIONS

Points of interest noted in foreign diving and fishing publications by Ross R. Olney, Associate Editor.

Australian skin diver Bob Starr and his wife Lillian, and Rodney McMahon, another Australian diver, will face agony and possible death soon when they allow themselves to be stung by the dreaded and deadly sea wasp as a part of a medical experiment. This is being done in an attempt to find an antidote to the shocking "two minute death" known to have killed at least nine people in the past few years. Technically known as the cubomedusae, the sea wasp has stinging barbs similar to hypodermic needles that penetrate the human skin. Active only during the rainy season, the wasp is feared so much that people refuse to enter the water during this period. Within two minutes after the sting, agonizing death is possible but a serum has been discovered which, if injected immediately, theoretically should combat the poison. This is the injection the divers will be given. (*Australian Newspaper*)

An unpleasant note comes from Florida telling of at least ten person being devoured by carnivorous fish in the Rio Purus tributary of the Amazon river after the launch in which they were traveling foundered. (*John Root*)

Something for the marine biologist to consider. Diver Merv Brown sighted a strange jelly-like creature at Waikiki. It was a six inch by four inch by two inch cube which seemed to propel itself by bending and straightening its back while pointing its "head" in the general direction of travel. If the specimen can be lined up between the diver and the sun, what it most likely uses for blood can be seen coursing rapidly through a number of channels in its body. (*Spearfishing Sportlight*)

Work by a Brisbane University scientist to find a first-aid treatment for stone fish poison still is being held up by a shortage of the fish. The scientist, Dr. R. Endean, said the fish were found in Moreton Bay where the bed was muddy sand, rubble and small rocks. Dr. Endean asked that anyone who caught a stone fish should keep it alive in a carton or tin, covered with wet weed only, and send it to the University for research. He said he had seen the fish exposed at low tide before. Although the Commonwealth Serum Laboratory had developed a satisfactory anti-venene for the poison, people stung were usually far from medical aid which is needed quickly. Venom from the stone fish causes agonizing pain and possible death within minutes. (*Angler's Digest and Shooter's Monthly*)

"This new gun is the ultimate in underwater weapons, sir. The spear is simply slid into the barrel for automatic loading. Care should be taken in handling these guns above the water for they are apt to go . . . Oops! Terribly sorry, sir." (*Australian Skin Diving Digest*)

Skin divers, working in pairs, are earning up to \$280.00 a weekend by catching lobsters, professional fishermen are claiming. They are raffling the lobsters in beach hotels and selling them direct to shops at less than half the market price, cutting heavily into the lobstermen's profits. Using lungs, divers are able to work along the bottom of the feeding grounds and even go into marine caverns after the crabs. Since there is no limit of lobsters taken by diving, fishermen claim divers are killing every lobster they can catch, irrespective of size. Instances were pointed out where divers had brought in bags full of "kittens" (baby lobsters) and offered them for sale. With divers working near their traps, professional lobstermen are blaming them for their low profits this season. (*Angler's Digest and Shooter's Monthly*)

NEW PRODUCTS

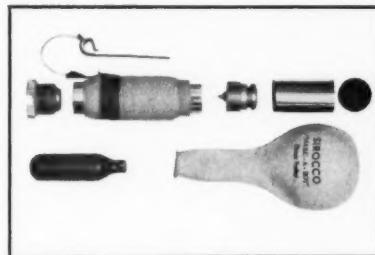
The New Products section is a regular editorial feature and is not comprised of paid advertising.



SEA SUITS—A complete line of full suits, ski suits, jackets, etc., in 1/4", 3/16" and 1/8" foam Neoprene, skin two sides. The suits come in all available colors; custom cut to order or in stock sizes, all items are guaranteed. SEA SUITS, manufactured by Sea Suits, Box 424, Garden Grove, California, have all brass zippers and all seams are overstripped. Sold through local dealers, write to manufacturer for further details and information.



DE WAN DIVERS FLAGS—Regulation size Divers Flags are available in 16"x20" boat size with 4" diagonal; 12"x15" float size with 3" diagonal; and 8"x10" automobile antenna size with 2" diagonal. Made of heavy, color-fast cotton flag-material with brass grommets to facilitate attachment to staffs or halyards. Priced at \$3.25, \$2.25 and \$1.25 postpaid respectively. They are available from DeWan Manufacturing Co., P. O. Box 2606, Milwaukee 14, Wis.



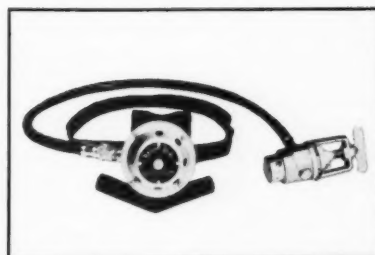
SIROCCO "MARC-A-BOY"—Designed as a safety aid for divers who get into trouble underwater and to mark their location for other divers, the Sirocco "Marc-A-Boy" is useful for marking obstacles, favorite diving locations. The 5-inch chrome-plated brass tube contains CO-2 capsule, special latex balloon and 15 fathoms of 50 lb. corlene cord that straps to diver's knife sheath, leg or arm. \$14.99 from SIROCCO, Box 1032, Lynwood, Calif.



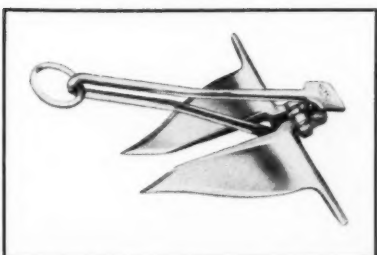
POLARIS DIVING MASK—Made by the W. J. Voit Rubber Corp., 2945 East 12th Street, Los Angeles 23, Calif. Polaris features a new one-way exhaust valve for clearing, and external equalizing levers. No impairment of vision—even the exhaust is funneled down and away from the face. Neoprene split headstrap, wide panoramic view, tempered safety lens and stainless fittings complete the appointments of the Polaris B13B-S mask. Blue or black at \$9.95.



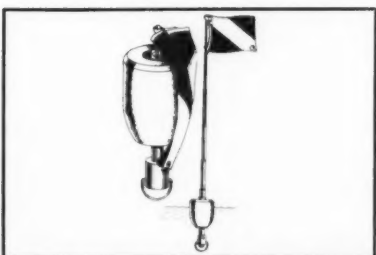
POLAR CHEST—Made of lightweight polystyrene foam and will not rust, corrode, or absorb odors. The chest weighs only 20 ounces, but has an 8 1/2 gallon capacity designed to keep food and beverages on ice or piping hot all day long. Large enough to store a complete picnic for a family of four. Skin divers find that speared fish stay fresher when stored between layers of ice in the "Polar Chest." \$3.98 from Expandable Plastics Corp., Akron, Ohio.



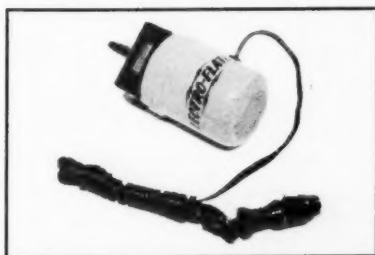
DACOR DART REGULATOR—New single hose, two stage regulator companion to Dacor two hose regulator, features large "piston action" diaphragm for easier valve operation; clearing button secured to diaphragm; hookah attachment fitting air gauge connector. Exhaust tubes discharge exhaled air to rear for clearer visibility. Complete with standard valve \$129.50; with reserve valve \$149.50; regulator only \$67. Dacor Corp., P. O. Box 551, Evanston, Ill.



HULL-GARD ANCHORS—Weighing 4 to 36 lbs., and constructed for secure anchorage of boats up to 40 ft. in length. Slip-Ring shank construction prevents snagging problems by freeing the anchor easily from rocks and crevices. Anchor accessories include corrosion-proof davits adaptable to any type of boat; an anchor clip which attaches to bulkhead, transom or elsewhere for anchor stowage. Made by Paris Pressed Steel Div., Dana Corporation, Reading, Pa.



WHITE STAG BUDDY BUOY—Designed to answer the surfacing problem, the compact "Buddy Buoy" attached to the diver's belt, always ready. When ready to surface, telescoping antenna is extended and the buoy released. It precedes the diver to the surface to warn that the diver is surfacing. Also used to send messages to the surface, or as marker buoy. Priced at \$8.95 from the manufacturer, White Stag Mfg. Co., Portland 9, Ore.



LECTRO-FLATE AIR PUMP—Plugs into the cigarette lighter of your car and will inflate an air mattress, inflatable raft, etc. Could also be used as an air pump to recharge the marine specimen container from the beach. Comes with a six foot cord and a rubber adapter to fit all types of valves. Price is \$9.95, plus 50 cents for mailing and packing, from Seven Hills Distributing Corp., 121 King Street, San Francisco, California.

SKIN DIVER MAGAZINE

TAKES A HOLIDAY

(Photos by Chuck Blakeslee, Bob Johnson and Mart Toggweiler)

BEING TIED in an office, and yet every day faced with diving news, diving pictures and diving stories, is disquieting, especially for a group of people who love to dive. With the added weight of our new "Diving News" and the expanded "Skin Diver Magazine," night and Saturday work became the rule rather than the exception, and the ocean looked farther and farther away.

There was only one answer. Lock the doors each Friday afternoon, hop on a boat as a group, and soak in the clear, blue waters of Catalina until late Sunday.

The pictures on these pages tell the happy story.

Co-publishers Jim Auxier, editor, and Chuck Blakeslee, advertising manager, were sponsors and arrangers of the weekend idyll. Wives and families attended as guests, since most of them are divers anyhow and would never have let the staff get away for a diving weekend without them.

Associate Editors Connie Johnson and Ross R. Olney,

anxious to perpetuate the perfect weekend drew up a staff calendar including a similar diving holiday after each publication is put to bed.

Oren Beard, probably the only man in the Navy to get seasick on an aircraft carrier in Los Angeles harbor handled things on the boat trip to the island. For a while we worried, but he's still with us.

The trip was a success in many ways, particularly for the front office's Bleth Spence, who finally charmed her escort Verne Dibbern into popping the question. How he did it underwater, and with double hose regulators, we haven't figured yet, but the announcement was made.

Shelia Reed, of accounting, didn't let the trip upset her daily routine. In silk pajamas, early in the morning, in the hallway of our Catalina hotel she was sighted doing her regular calisthenics.

But it's said that pictures are worth a thousand words, so let them speak for us.

Editor Jim Auxier checks regulator in race to see which staffer hits the clear, blue water first.

Not Chuck Blakeslee, advertising manager, who prefers leisurely entry into wet suit, then water.





Hail, hail, the gang's all here. In scuba gear are (l. to r.) Verne Dibbern, Bleth Spence, Ross R. Olney and Pat Olney. Snorkeling down in background is purist Connie Johnson.



On a dance floor of pure white sand with giant kelp columns holding the surface far above, Ross and Pat Olney decide to trip the light fantastic to bubbling music.



California is great in March! Ask bikini-clad Connie Johnson (left) and Bleth Spence as they soak in the sunshine on the flying bridge.



Oren Beard smiles with a resigned air as he is initiated into the mysteries of pounding abalone before a sumptuous Saturday night feast.



Accounting is forgotten for the moment, unless plunging Sheila Reed thinks she will find her books on the floor of the Pacific.





Bleth Spence stuffs abs and other specimens into her "itty-bitty-ditty-bag." Spear held by Verne Dibbern wasn't used . . . he proposed instead to diving buddy.

Even the kids had a ball! In the foreground Marc Johnson tries his luck with rod and reel as "Frosty" Olney offers advice between dives. Yvonne Auxier, in hood, prefers watching divers.



Somebody found something! Gathering to investigate are (l. to r.) Jeri and Chuck Blakeslee, Bleth Spence, Sheila Reed (the finder), Verne Dibbern, Jim Auxier and Homer Fletcher.

All good things seem to come to an end. Catalina's famed Casino fades into the west and no smiles are evident. Pat Olney, Chuck Blakeslee, Connie and Marc Johnson and Carol Blakeslee remember.



FRANK SANGER

(From material submitted by Bob Cahill)

WHEN Frank Sanger was a two-year-old toddler he slipped under the wheels of a trolley car in Salem, Massachusetts. The accident cost him his left leg and right arm.

But Frank never let his handicap affect his activities. He played baseball and football with the gang on the vacant lot and today is considered as one of New England's foremost divers and an authority on diving physics.

Frank always enjoyed swimming and as a youth spent most of his leisure hours in the Atlantic. He loved to swim long distances and on one occasion swam over five miles without stopping. He became interested in skin diving at the age of fourteen and developed a powerful eel-like wiggle that outdistances many conventional swimmers. "It was easy to learn to swim," Frank explains, "because I didn't have to learn to coordinate two arms or two legs. I simply pull with the arm, kick with the leg and bend my body in the middle."

While majoring in chemistry at Northeastern University, he heard that scuba lessons were being given at the Boston YMCA, so he joined the class. His instructor Jim Cahill and others in the class were astonished at Frank's ability. On his first dive in the ocean, Jim Cahill carried him to the water on his back.

After his first experience at breathing beneath the sea, Frank knew that chemistry would have to take a second place in his life.

Many of the east coast divers say that diving with Frank is always a humbling experience. He suits up in a sitting position and dons his gear with little more struggle than the others. However, once in the water he speeds to the bottom and "it takes a real effort to keep up with him."

Since 1954 when Frank learned scuba diving he has twice been president of New England Divers Frogmen Club of Salem and in 1957-58 was one of the directors of the Northeast Council. He was the group leader of the first Massachusetts Civil Defense Team and is now educational director and vice-president of New England Divers Inc. of Beverly, Mass.

Frank received the highest mark in the National YMCA Instructor Certification exam held in Boston last year. He has taught over a thousand persons how to use scuba equipment and has given special classes to the Massachusetts State Police. He has been teaching at the Salem YMCA and Boston YM and YWCA's for over five years. His greatest achievement as an instructor is the sponsoring of special diving classes for other amputees. He feels that they, like himself, can find freedom beneath the sea.

Frank has achieved a depth of over 200 feet and has been diving on all the well-known wrecks along the North Atlantic coast including the Chelsea, the Civil War ship New Hampshire and the Gallatin, a revenue cutter that sank off BooHoo Reef in 1892.

In September 1958 when two planes collided and crashed into the ocean off Plymouth, he searched continuously for two days until he found the wreckage and recovered the bodies. He was in charge of operations at the Electra plane crash in Boston Harbor and was one of four divers involved in finding the Texas Tower that collapsed in the Atlantic this winter.

During his leisure hours, Frank enjoys scouring the ocean floor for lobsters. Before each dive he carefully places his wooden leg on the sand or beside a clump of rocks.

"I can't swim with the leg on," he explains, "it floats."

Only once while diving for lobsters did Frank ever have to ask for assistance underwater. Usually the swiftness of Frank's one hand is no match for a lobster, but this time Frank stuck his hand into cave which contained an eight pounder. The lobster clamped Frank's thumb in its crusher claw. Inside Frank's faceplate the tears rolled down his cheeks as his buddy had to pry the claw open. The result was a chipped bone and badly swollen thumb, but also a tasty lobster dinner at the Sanger home that evening.

The sandy haired twenty-seven-year-old is married and has two children. When not diving, his chief interests are chemistry and guns.





Author Dick Anderson waits patiently as tenders dress him in hard hat outfit for dive on framework of oil rig.



Anderson lowers helmet on Frank Donahue, who will attempt to grab in the drill pipe while author photographs the operation.

OIL

By **DICK ANDERSON**

Author/Diver Anderson
of "Buffoonus Aquarius" fame
writes of oil rig diving



Frank Donahue checks drill pipe and crater at a depth of 250 feet before hard hat dive.

I'LL TELL YOU about two dives, one in helmet gear and one wearing scuba. Both over 200 ft. One went smooth as clockwork and the other was a fiasco. I'm not going to state any pros or cons about scuba or helmet gear. As you know there is some controversial feeling among divers on this subject. My feelings have always been this—if the job calls for scuba gear, go scuba and if the helmet is best suited use the helmet. The incidents in this report have no bearing on the equipment used. Only the human element can really be considered.

At the time these dives took place I was working with Frank Donahue of United Offshore Divers in Santa Barbara. The oil exploration ships and barges worked day and night so you might get a call at any hour to do any kind of job at any depth. We performed every underwater task imaginable, from inspecting the hull of the drill ship to photography at 250 feet.

One morning Frank answered a call from an oil company that wanted to redrill into a test hole that they had capped previously. All they wanted was to be sure they were over the hole, to photograph it and to "stab in" the drill pipe if possible. I heard Frank explain that the best method would be to use scuba so we could cover a large area quickly. The company went for it since time meant a great deal of money considering the ship and crew. This like every oil company call was a rush job and we hurriedly checked and loaded our scuba gear into Frank's pickup and roared out of town. The twenty-five mile ride to the pier at Gaviota took little time with Frank's heavy foot on the gas. The oil company launch was waiting alongside the pier when we arrived. As usual the transferring of the gear from the pier to the waiting launch was hampered by the large ground swells that roll in at Gaviota, almost breaking under the launch's stern. The trick was to unhook the hoist hook at the precise moment when the load touched the deck while the boat was on the top of a swell. If you missed, the load and the boat deck were in for a good bang with the next swell. However this loading went without mishap and the twin diesel powered, all steel launch raised its bow in the water and planed as we sped to the oil barge.

When the launch tied up to the barge we had all of our gear laid out, checked out and ready. There was no need to transfer our equipment to the barge so we planned to descend directly from the launch.

The chief engineer came aboard and gave us the last minute instructions while we got into our gear. When they were on the spot before,

they had taken a fix and now were relocated over the hole as nearly as they could figure.

He gave Frank orders to "stab in" the drill pipe if we could. I was to assist in this operation but primarily I was to get photos of the plugged hole which would tell the engineers what they wanted to know. We hit the water at twelve o'clock noon and began our ascent down the drill pipe. Frank had a signal line for communications and I had my Rollemarine with flash. We made a rapid descent in the clear water and reached the bottom in about three minutes. The visibility at the bottom, 250 ft., was at least 50 feet. We looked around and both spotted the hole which appeared as a small shallow crater rimmed with bits of blasted concrete and filled in the center with a ball of collected seaweed. I immediately took several shots of the crater from different angles trying to get a complete coverage. This done, I swam over to Frank at the pipe, a distance of forty to fifty feet. He was already giving signals on the manila line. In immediate response the pipe raised up out of the sandy bottom and stopped. We began to push it over to the crater, digging the sides of our fins in at every step to get traction. When the pipe was centered over the crater and Frank gave the prearranged signal on the manila, down came the pipe. It was dead center in the crater although we could not see the hole itself. Another signal and the pipe began to turn and drop some more. Apparently the bit hit the casing and not the hole because as they lowered from the barge, instead of going into the hole, the pipe made a big arc in the two hundred fifty feet of water. It was at a forty five degree angle from the bottom before the signal to stop was relayed.

I shot the remainder of my film and we headed for the surface. There was nothing more we could do on the bottom. We hadn't stabbed in, but we did have the pipe in the hole for the next diver and we had the photographs they needed. We had been down for fifteen minutes and paused at the 30, 20 and 10 foot stops for the prescribed decompression.

We surfaced and gave our report to the engineers. Now they wanted to see the photos. We had immediate processing available in Santa Barbara and it would be only a matter of hours until they had the eight by ten prints in their hands. Later Frank and I answered a call from a drill barge that had finished its exploratory drilling and was ready to move to another location. This involved the use of divers for the submarine disconnecting operations. It was around midnight when

we reached the drill barge. The sea was so high that we didn't try to transfer our Navy helmet gear, instead we planned to use the gear of another diver who had been diving earlier and now was undergoing a desaturation period. Frank was in the water by 12:30 a.m. and began his descent to 220 feet. His job was to disconnect the "blowout preventers." He finished his task in a little over the optimum exposure time and we brought him up to 30 feet.

After the required decompression at the 30, 20 and 10 foot stops he surfaced. The blow out preventers came up shortly after. The only equipment that remained on the bottom now was a steel framework. This framework was roughly six feet high, twelve feet across, hex shaped and covered with expanded metal screen. The blow-out preventers rested on top of the framework and the screened top offered steady footing to the divers and prevented tools from being dropped into the maze of angle-iron below.

I was given the simple job of going down and hooking the sling shackles into the two pad-eyes welded to the top of the framework. As they dressed me into the suit I watched the rough-necks ready the sling and lower it into the water on the end of the drill pipe. It would be waiting on the bottom when I got there. The job should only take a few minutes.

The helmet was put on last and given a quarter turn to tighten it against the neckring gasket. Then came the phone check. I could barely hear Frank and he could barely hear me. He swatted the phone box a couple times which improved things a little. The equipment I was wearing was a lightweight Japanese helmet outfit that had undergone a great deal of modification which would not have been considered improvements by Navy standards. The helmet didn't have a transceiver, which allows two-way conversation through one mike. Instead the helmet had a speaker and the earphone was attached to a loose fitting watch-cap. But, for a job that didn't depend upon communication, I felt the phones were adequate. Besides it was all we had. Two resounding taps came on the helmet which meant that I was all buttoned up and ready for the water. I walked to the ladder and climbed down. There was a greased $\frac{5}{8}$ " cable for me to descend down. I hit the exhaust button and began my descent.

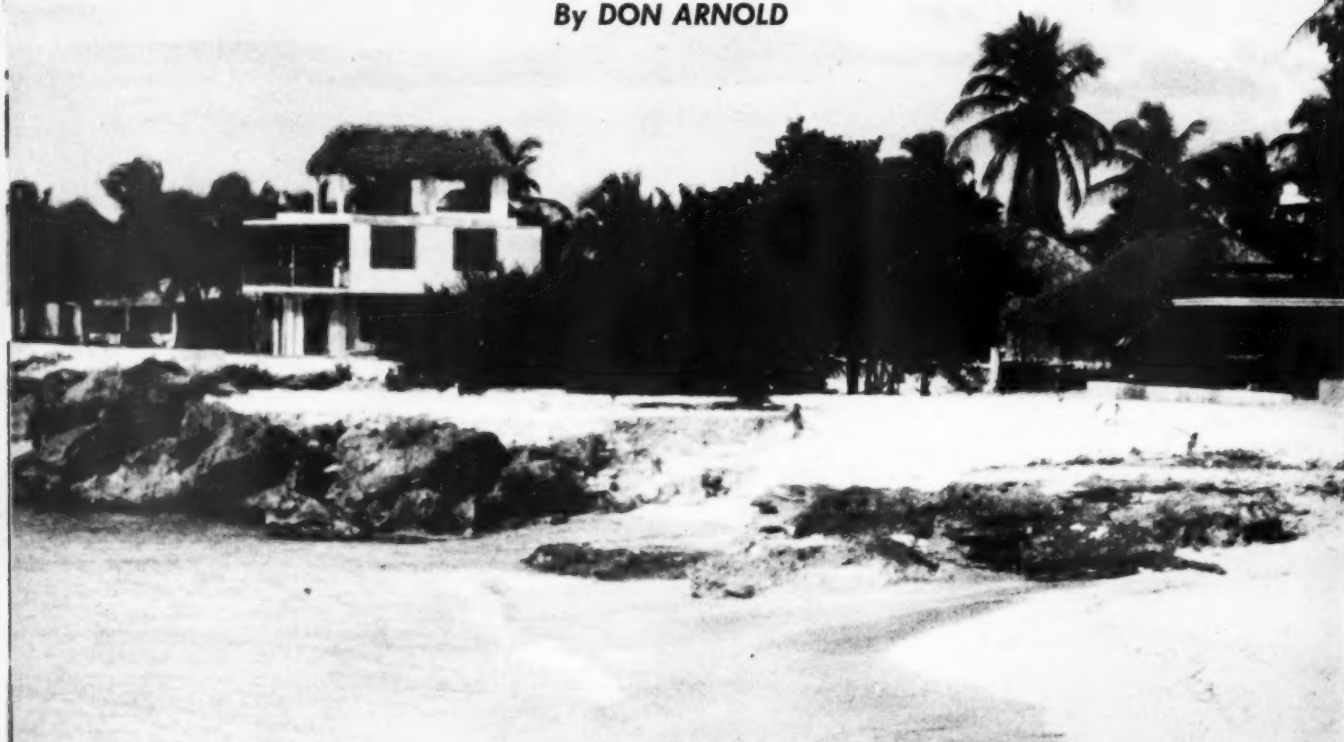
Suddenly the pressure hit me and I yelled to Frank to tell the tender paying out the hose to slow down but it was lost in a spray of static. I was going down so fast that I was afraid I

(Continued on Page 58)

COZUMEL

Mecca for the new Caribbean

By DON ARNOLD

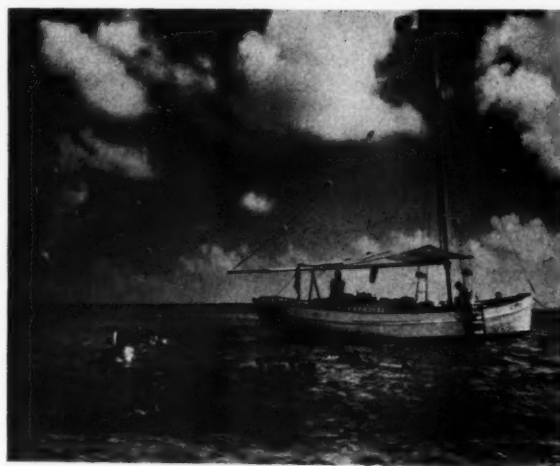


TRAVEL FOLDERS depicting the splendor of the Caribbean tropics don't mention it. Most maps find that they just run out of room when it comes to adding the dot, and, unless you've got an ear tuned for the off-beat, you're just not going to hear about it. But that's part of the charm and the excitement of Cozumel, the gateway to Mexico's Caribbean coast.

The sound of the above might lead one to believe that it takes a safari to find the place. Nothing could be further from the truth. Cozumel is four hours by direct flight from Mexico City, three and a half hours flying time from New Orleans, and about five hours from Miami. The island is served by DC-4 equipment of Compania Mexicana Aviacion (CMA) and the landing strips, thanks to the U. S. Government's Caribbean defense plan of World War II, would do any town, far larger, proud.



Dotted with ancient Mayan cenotes, the thick jungle of Cozumel is a wonderland of nature. The island was the religious capital of the Mayas.



The waters surrounding the island of Cozumel fit perfectly the ad writers phrases "glass-clear," "crystal-clear," "luminous" and "mirror-like."

There probably isn't one island—and since I've failed to mention it, Cozumel is an island—that doesn't spend an awful chunk of its promotion money publicizing the clarity of its waters. Ad writers and brochure scribes coin such phrases as 'glass-clear,' 'crystal-clear,' 'luminous,' and 'mirror-like.' We'll leave the pretty language to the practitioners and just say that, at any diving depth, at any time of the year, you can turn your head to the surface and see the keel of your boat, providing, of course, that your boat is above you. From the surface, it is not unusual to spot the rock that is full of lobsters or the cave that will house the giant grouper.

One of the guides—an American named Bob Marx, and an exceptionally talented diver—became discontented with his role as semi-freak in the fast developing vacation circus. Marx loved Cozumel and he knew that the waters held secrets and thrills that could enchant the pro and the amateur alike. He was excited by the lore of the island—legends which began with the conquistador, Juan de Grijalva in 1518, and passed on through the centuries to include the Lafittes, Henry Morgan, 'Pato de Palo' and Fermin de Mundaca. These fellows never just dropped in on an island—they always left a calling card, and Marx was determined to find them.

One of the persistent island legends that intrigued Bob Marx was the tale of 'El Matancero'—a sunken galleon, supposedly about 30 miles southwest of the village. It became a Class A cause célèbre for the young "buzo" (Spanish for diver), and to make the fairy tale complete, he found it.

However, much of the mystery and the tale of 'El Matancero' remained its secret. Speculation had it that it was English, but Marx and his partner Clay Blair were not content with this explanation. The story of their search for the truth makes one of the more exciting adventures of stick-to-it-iveness as recounted by Blair in a recent issue of the *Saturday Evening Post*. (August 27, 1960) and their book "Diving for Pleasure & Treasure."

But the Marx-Blair-CEDAM explorations did not end the search for the unusual in Mexico's Caribbean waters.

In this past year, Ed Link, the famed underwater explorer, has authenticated a Pre-Columbian wreck, La Nicolasa, off the island of Cancun, just north of Cozumel. This past summer, CEDAM made its explorations from this find and discovered two additional wrecks, tentatively called Lafitte I and Lafitte II. This same group uncovered a genuine ship graveyard and located an underwater Mayan temple almost directly opposite Cozumel. And so for the adventurer—the explorer—the Cozumel waters open up new vistas. And these things are not only available to pro. The amateur can, likewise, have the excitement of a visit to antiquity, set in the delightful surroundings of a tropic paradise. Add all of this to the magnificence of the spearfishing and the clarity of the water for photography and you have any diver's dream.

And Cozumel can offer open doors to the underwater devotee. Called 'The Dive' (El Clavado, in Spanish, without the same double significance), the island's diving shop has become the center of all things aquatic for the island and at prices that can be met. Organized and guided trips, fully catered, are arranged. Sales, rental and repair of equipment, purified, 24-hour air service, island accommodations and information—all of these things have made The Dive one of the favorite hangouts in the Caribbean.

In addition, it must be mentioned, that all of the appeal of the island is not centered in the sea. The beauties which include wide expanses of white sand beaches, bays and lagoons are considerable. The historic importance of the entire area—situated as it is off the coast of the Yucatán Peninsula—goes far beyond the days of the buccaneers. The Peninsula was the seat of the Mayan World and Cozumel was its religious capital. No trip is complete without a visit to the fascinating ruins of Chichen Itza and Uxmal, that can be reached easily from Mérida, an hour flight from the island. Cozumel, itself, with the Castillo Real and San Gervasio, and the famed, walled-city of Tulum, an overnight sail to the coast, just add to the thrills that come from an understanding of the ancient and highly-skilled people—the Mayas.

DEVIL'S ISLAND

DIVING

By **SAM DAVISON, JR.**

Vice President, Dacor Corporation

The waters are still shark infested around an island infamous in history

I THOUGHT of many things as I slipped into the water with my single tank on my back. I thought of the many who had gone into this very water before me . . . never to return. I thought of the sharks, perhaps waiting and watching me after their long fast. I thought of the cruel, impenetrable jungle all around this lonely stretch of rock and sand, and how long I, myself, had waited to actually see this island and to dive in this water. The water felt cool and refreshing on my back as I submerged, still remembering . . .

My first experience with Devil's Island came about in 1938, while as a boy, I was in a department store in Atlanta, Georgia, buying some Boy Scout equipment. The whole store was in an uproar. I remember asking a woman who was dragging her small son toward the elevator, what was causing all the commotion. She told me that an escaped convict from Devil's Island was in the department store. This, then, was the reason for all the excitement. It was true, there was an escaped convict from Devil's Island and his name was Rene Belbenoit, who, after four attempts to escape, finally made good his fifth try at freedom. He was autographing his book "Dry Guillotine," a best seller, which told the story of this man's

15 years in a living hell, the infamous French penal colony of French Guiana called Devil's Island. The sales on his book afforded Rene enough money to start a new life in the United States where he met and married an American woman. Later, he wrote articles for magazines and newspapers and recently appeared on Ralph Edwards' show, "This Is Your Life." Shortly after this, I was informed by my dear friend and his wife, Lee Belbenoit, that Rene passed away of a heart attack in his sleep. After the war, my interest in Devil's Island became very acute. I read every book and article written about the place, corresponded and talked with the few people who had been there, and planned one day to dive in French Guiana, myself. At last, early this year, I was ready to go. A good friend of mine and I planned to fly a single engine Beechcraft Bonanza from Chicago to French Guiana, South America. We took off from Chicago one morning at 6:00 a.m. and headed south.

At last, after days of flying and countless gas stops, we spotted the Maroni river that separates Dutch and French Guiana. We were now over French Guiana and it was easy to see why no prisoners escaped through the



In left picture, author peers down into solitary confinement cells from guard's catwalk. Below, view down into one of the cells, in which men lost their minds from long, lonely imprisonment.



Sam Davison, Jr., leaving shark infested waters between Ile Royal and infamous Devil's Island.

Author Davison returns to rocky shores of Ile Royal, headquarters of the once ill-famed penal colony. Devil's Island is in background.



Fishing boat on which author traveled from mainland of French Guiana to once despised offshore penal islands.



jungle. The jungle was not only thick and practically impenetrable but also unexplored.

We parked the plane near the tower at Rochambeau airport and noticed how funny it looked, as it was the only airplane on the entire field.

Most people have the wrong conception of this Island's past history. They believe Devil's Island to be an island to which prisoners were sent. Actually, 95 percent of the convicts were kept on the mainland of French Guiana, working in jungle camps through the Colony. Devil's Island is one of three small islands 10 miles off the coast called "Ils de Salute" and this is where we were headed. However, the entire penal colony throughout French Guiana was referred to as "Devil's Island."

We spent three days in Cayenne running around trying to get a fishing boat to take us to the island. On the third

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120 MILES OUT F E E T D O W N

By **GEORGE YOUMANS**

THIS is the fabulous Flower Garden off the coast of Galveston, Texas. Many stories have been told by fishermen and shrimpers who have seen this wonderland of sponge and coral, of broken fishing rods, giant barracuda and schools of hammerhead sharks. This spot of coral at its highest point juts out from the bottom of the ocean to within 75 feet of the surface and is but a small speck in the vast expanse of the beautiful Gulf of Mexico.

It was these tales of a wonderland seen from the surface that seems to intrigue and demand that its bottom be explored, and so it was by a group of 35 divers from the Houston Underwater Club, Alameda Divers Association, and Brazosport Underwater Club with full help and co-

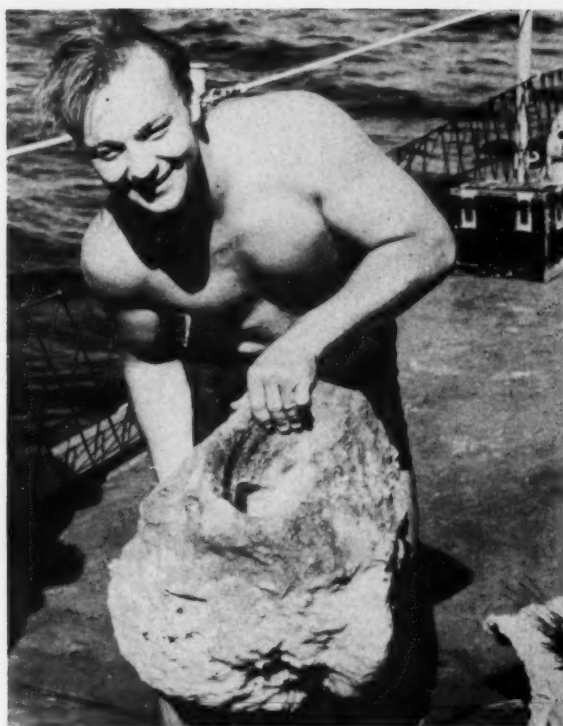




The United States Navy destroyer "Wren" steams slowly out into the Gulf of Mexico toward a midnight rendezvous with the fabulous Flower Garden.

Bob Dooley displays huge species of sponge retrieved by divers from the Garden below. Specimens will be exhibited in Houston Museum of Natural History.

In the ward room of the "Wren" are (left to right) Robert Dooley, Dr. Pulley, George Youmans, Dr. Wendell Pierce, Capt. Simonet, LeRoy Rudder and Dr. Cliff Condit.



operation of the famous U. S. Navy Destroyer "Wren".

How does it happen that a group of civilians can board a Navy destroyer that will take them 120 miles into the Gulf to dive? In order to explain this we must go back to over a year ago when the Houston Underwater Club was holding its bi-weekly meeting at the Museum of Natural History of Houston. Dr. Pulley, Director of the Museum, and Bob Dooley, curator and also an avid diver, after watching a film made in Mexico, expressed a belief that a flower garden off our coast would hold an abundance of the same type of coral and fish found on the reefs off Mexico. Now for the big problem of finding a boat capable of locating the exact spot and also one large and safe enough for this type of diving trip. At this point Lt. Rudder of the U. S. Navy Reserve, a member of our club, stated that since Dr. Pulley wanted to bring up specimens of coral, marine life, etc. and recreate in the museum an exhibit, we might possibly get the Navy to take us aboard one of the two destroyers operating out of Galveston. This was an excellent idea, but most of us thought it impossible and shoved it aside for more important business at hand. But not Dr. Wendell Pierce who started pushing Lt. Rudder, Dr. Pulley and myself or

anyone else who would listen. Without his continued push and encouragement the trip would never have been made.

Shortly after the Underwater Society convention in Houston we received definite commitment by the Navy to transport 35 scientists and divers to the location.

There were many hot arguments as to what we would find and whether we should take loaded spearguns. It was finally resolved that since it was a scientific study of the bottom of the ocean solely for the purpose of taking pictures and gathering specimens, there would be no spearguns allowed.

Then began the greatest search in our area for divers who had double tanks, camera housing and cameras. At last on Thursday afternoon, with a variety of cameras, home-made pick axes and Charlie Watson's shark cage, we headed for Pier 42 and the U. S. Navy Destroyer "Wren." The weather was calm and clear as we slowly edged into the Gulf between Galveston's north and south jetties. We were to arrive at our destination around midnight, start diving around eight o'clock the next morning

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SHARK ATTACK!!



A Rare Occurance . . .
An attack in the presence of
qualified, scientific observers

By RON CHURCH

(Photos by Author)

MOST every day at Wake Island is very warm and nice, and this March 8th, 1961, had the appearance of being the same. Jim Stewart and I were off to the reef to beat a hole in the shallow coral area to install a new addition to the long period wave recorder we had installed September of last year for Scripps Institution of Oceanography. This recorder, properly called a "Tsunami," records tidal waves or waves having a duration of five minutes or longer. These waves are not visible to the eye and rarely obtain more than five inches increase in water height.

Jim is a real veteran to diving, one of the pioneers of our area with some eighteen years of experience under his belt. Studying botony in college he soon turned his interests to marine botony, thereby acquiring his job at Scripps studying the mysteries of kelp on a program headed by Dr. Wheeler North. Jim is also a real spearfisherman and a member of one of the oldest and most famous diving clubs around, the Bottom Scratchers. He has landed many big ones, with the white sea bass remaining his favorite. He is now the very capable diving officer at Scripps, giving an experienced guiding hand to all new divers among the students of the University of California, as well as the Treasurer of Scientific Diving Consultants, the corporation of which he is a partner.

We were working hard to try to penetrate the iron like surface of the coral reef. The going was very slow and the pick seemed to be getting heavier and heavier. The water splashed up into our eyes with every blow. We were beginning to think that our backs would give out before

the six inch deep hole that we needed was finished. Nearing completion we decided to cool off and make a dive to check the hose and interface assembly that we had cut loose but left on the bottom the day before.

The 80 degree water felt cool as we swam out. We were going out to make an inspection dive just to make sure everything was in order and not tangled up. The water visibility every day is at least 100 feet at Wake, so it was not difficult following our hose from the surface out to the interface area. We made a dive to the bottom, 68 feet at this point, checked the hose and interface tube and found they were all in order for their removal the next day. In warm clear water this depth is not particularly difficult and being merely an inspection dive, preparatory to a scuba dive later to remove the interface, we did not choose to use scuba equipment.

Up to this point, as we swam back in, everything was perfectly normal. We were busy watching the beautiful environment and fishes in the gin clear water. As we approached the shore and reef area, Jim and I were separated by a short distance. He was looking at some majestic looking coral structures and I was watching a school of bright yellow butterfly fish. Then I noticed a shark about six feet long coming toward us from my left. He was right up next to the reef, between us and the shore. The water in which he was swimming was only three feet deep, and he was just barely outside the surf break. It was a black tip shark, common to most of the Pacific islands, and common to us. At Canton Island, from where we had just come, every dive we made we

would see at least ten of these sharks. Sometimes in schools of five or more in one pack, so at first glance it was not an unusual sight to see this one.

The shark swam on past me and over toward Jim. Seeing Jim in front of him he turned back toward me. Jim and I were swimming toward each other and the shark was between us. In the area where the shark was lies a deep crevice or ravine running down between two large coral points. I was above one and Jim above the other. We were now in about fifteen to twenty feet of water. The shark moved back and forth between us a couple of times then turned out to sea along this crevice. As he passed by Jim made a move toward the shark, which in the past has always made them flee. I swam out after the shark for a short distance as he left. All this time the shark's movements were completely typical, swimming slowly with his tail at a casual speed. At this time he was swimming free, not trapped. But at this point things began to change.

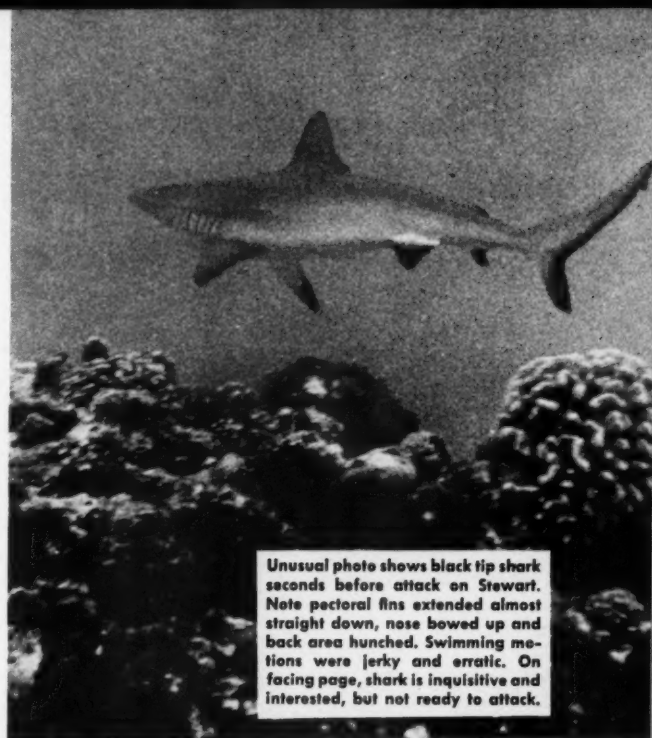
As he swam away from us his swimming become very radical and erratic. Not using just his tail but his whole body, he seemed to be glancing back at us with every movement. The whole body was being used to swim with, his head moving back and forth almost as much as his tail. Much to our surprise, instead of continuing out to sea he turned back toward us. Jim and I were about parallel with each other on the crevice, and I was outside him some fifteen feet. The shark started a small circle just opposite us and as he came around his body started turning and twisting and rolling back and forth in the water as he swam. He trimmed himself with his pectoral fins.

At first I thought he was sick but Jim knew the symptoms since he had seen these same type sharks at Eniwetok. It was plainly evident to us now that this was not a normal circumstance so we edged toward the shallower coral point area. The shark continued this small circle and as he headed toward the reef he straightened out and began to increase speed slightly. At a point opposite Jim, he abruptly turned and made a lightning speed pass directly at Jim.

Jim side stepped to his right. The shark, narrowly missing him, went around in a sharp V of less than a five foot radius and came back directly at Jim's face. Jim had just enough time to swing around the opposite direction and throw out his arms in defense. The shark grabbed his elbow area, gave two quick bites and flashed away. All this happened in less than five seconds.

I must have been swimming toward Jim when he was doing this because I was right beside him just after the shark veered. I put myself between Jim and the shark to try to fend him off if he came back. The instant the shark bit, Jim grabbed the pressure point under the arm to stop the bleeding, something that not many people could remember to do in a panic situation. It may have saved his life. We quickly swam toward the shallow point and the reef over which two feet swells were breaking.

As we stumbled onto the reef a horrible thought flashed through my mind. The truck we usually have with us was back at our quarters a mile and a half away. Saxe Montgomery, the other Scripps member of our trip, had dropped us off and was coming back to get us. But fate was definitely with us, for as we emerged from the water there was a man trying to catch small fish in the reef shallows. We asked if he had any transportation and found he had a truck about fifty yards away. By this time we had dropped all our diving equipment and I was holding the pressure point under Jim's arm. We estimated he had already lost a pint and a half of blood. Our main concern now was to get back to the dispensary. The



Unusual photo shows black tip shark seconds before attack on Stewart. Note pectoral fins extended almost straight down, nose bowed up and back area hunched. Swimming motions were jerky and erratic. On facing page, shark is inquisitive and interested, but not ready to attack.

truck got stuck for a few minutes sending a chill of horror into us. Finally it was freed and we raced into town probably as fast as that truck has ever gone.

Jim was taking it like a real trooper; with his calmness and cool head you would think that this happened every day. The shark had taken a good sized chunk just above the elbow of the right arm. It was hard to tell at this point just exactly what the damage would be. As we neared the dispensary the loss of blood was beginning to tell on Jim as he started to weaken but he made it all the way under his own power. The wound, which up to then had been numb, began to pain. After about five minutes of nurses' confusion as to what to do he was given a pain relieving shot, and a tourniquet applied.

Wake Island does not have a surgical doctor or general anesthetist, so there was nothing they could do for him but bandage the wound and send him off to Honolulu. The next plane was leaving in thirty minutes and it was a C 124 cargo plane, one of the slowest flying. I accompanied Jim and it took us eleven hours to get to Hawaii. I might add, the longest eleven hours I think Jim or I have ever spent. It's a horribly helpless feeling to be out 2,000 miles from the nearest medical help, something that should be taken in consideration before going diving anywhere. Jim had to lie in a stretcher the whole way, an intervenous needle in his arm to a bottle of blood plasma. He was very uncomfortable. The ambulance that had eleven hours notice that we were coming was, of course, late. Jim was rushed to Tripler U. S. Army Hospital and went into surgery shortly after. There were times when it was feared he might lose his arm, but fortunately the shark had not cut any tendons or arteries except one small one, leaving him complete use of fingers, wrist, etc. However, there was considerable muscle damage secured back in place. Other than a good sized hole and scar to show his grandchildren, it looks like Jim is going to be okay and out spearing white seabass again.

I had to go back to Wake to make that last dive with Saxe to finish the job. Don't think I wasn't scared and twisting my head around watching for sharks. As it turned out we never saw any but my neck is still sore from looking. »



by JEAN DOWD

Junior . . .

FIN FANS

(Would you like a diving Pen Pal? Send in your name, age and address and we'll print it in the Junior Fin Fans column. Write to: Junior Fin Fans Underwater Mailbox, c/o Skin Diver Magazine, Lynwood, California.)

Who could turn down a chance to dive on a famous treasure ship? Dave Thomas watched his dad stow diving gear aboard their 43 foot boat, Hornet. The Hornet, rigged for commercial underwater salvage work, was headed for duty in Arguello Bay where Lawrence Thomas and two partners have a state franchise to salvage brass, copper and monel from seven destroyers. On a routine dive in the area designated to them, they had discovered the Yankee Blade, lost off the Southern California coast in 1854. This combination sail and side-wheeler carried over \$153,000 in gold aboard.

Unfortunately Dave, who is an enthusiastic newcomer to the sport of diving, had to turn down the exciting prospect of exploring the Yankee Blade and return to

important projects of his own in Morro Bay. It was his own fault. No one had asked him to put that inconsequential box of shells in his front yard six years ago. Dave had wanted to earn a little spending money. Deciding that anything would be better than the traditional lemonade stand, he put his best shells forward and added a "for sale" sign. Business grew at an alarming rate. Tourists bought beautiful shells as souvenirs. Teachers bought shell displays to show the children. Children bought shells to show the teachers.

Since it soon became impossible to keep enough shells displayed on boxes in the yard, his father built him a shed as a salesroom. Now the problem became that of gathering enough shells to keep up with the demand. Dave decided to add im-

IT'S CONTEST TIME AGAIN
Enter this new, easy contest for Juniors. Win diving equipment.

PRIZES GALORE
Your entry may win a wet suit, fins, mask and snorkel, books or many other diving products.

ENTER NOW
See rules for contest and list of prizes donated by leading manufacturers of skin diving equipment at the end of this month's column.

CONTEST RULES
Open to: any individual, 18 years of age or under, anywhere in the world.

For completing this in 25 additional words or less: "Skin Diver Magazine makes diving more fun for Juniors because . . ."

Closes August 20th, postmark.

Address: Junior Fin Fans Contest, Skin Diver Magazine, Lynwood, Calif.

Judging based on age, sincerity and aptness of thought.

JUNIOR CONTEST PRIZES
Prizes donated by:
Swimaster, Ski 'N Dive, Healthways, other manufacturers and dive shops.

ported shells to his stock. This meant regular trips north to San Francisco to pick up shipments from the Philippines, Australia, Hong Kong and Mexico.

Enough merchandise arrived to give most of us a mild case of shell shock. Dave now needed a larger storage area and more room to display his collections. He and Lawrence built the present 12 x 18 display shop and utilized another larger building as a shell lab and warehouse. Needing inexpensive shelving in a hurry, Dave utilized materials at hand. He



This 1300 pound piece of jade received top honors at the California Mineralogical Exhibit in 1959. It is one of many large specimens salvaged by Lawrence from Jade Cove.



Dave Thomas has a large selection of shells in stock. Some shells are sold for only a nickel, while a perfect specimen of a very rare shell might be sold for \$500.

Photos by Ed Dowd



Lawrence and Dave Thomas have an unusually fine collection of cowry shells in the display cabinet which Dave made in his high school woodshop class.



Many hours are spent by Lawrence and Dave in their well equipped shell laboratory. They prepare shells in this area for both sale and storage.

stacked oyster seed boxes along the walls to house the shells ready for display. Since seeds are imported from Japan at regular intervals to replenish oyster beds at Morro Bay, Dave can always count on having plenty of boxes.

The shell lab became Dave's main work area. Here shells are cleaned and prepared for the salesroom. Foreign shipments sometimes arrive with pieces of the dead sea animal lodged inside shells, and it takes many hours of hard work before they are ready for a collector's shelf.

Expansion of facilities brought about a crisis. Business was just too good. The David Thomas Shell Shop needed more manpower, so Dave persuaded his family to quit their work to join him in this thriving business. Part of another building was soon required to house a rapidly growing family collection of fine local and rare shells. Barnacles, moon snails, abalone, sand dollars, cowries and dog whelks are found in Morro Bay. One very rare specimen is found locally although Dave has been unable to find this fact recorded in any of his books. It is the *Spiratropis perversa*, a left hand turn shell. Most shells spiral to the right. His parents are especially fond of cowries and volutes, the aristocrats of the shell family. They already have over 100 varieties of cowries. From the volute family they have a *Salmon caroli*, one of twelve such specimens known to exist among collectors today.

Business is out of bounds again, which should be fair warning to parents of enterprising youngsters. Lawrence is busy drawing up plans for a new 40 x 80 Shell House, and it's a good thing he doesn't know this may be just another beginning. Dave purchased two beach lots with his earnings. After what he did to the front yard there's no telling what he'll accomplish with two large lots at his disposal.

The success of the Shell Shop is undoubtedly the result of the sincere enthusiasm of its owner. Dave has always been interested in studying about shells and the animals who inhabit them. He has acquired a sizeable technical library on the subject and has a better understanding of conchology than many adults interested in the subject. No wonder tourists stop to browse a moment and, instead, find themselves staying to hear more about living marine

fossils, dead cone shells and shrimp with claws of ivory.

It was inevitable that the adventurous Thomas family would come to share Dave's enthusiasm for the sea and its inhabitants. Dave and his sister were born on a small island near Ketchikan, Alaska, where their parents fished commercially. They lived along the Oregon coast for awhile before settling in Morro Bay. It is an ideal spot for those who like the sea. When Lawrence has time for a day off, he joins divers Ernest Porter and Dean Tyler aboard the *Yankee Blade* or one of their seven destroyers. As for the Hornet, she may someday be worth her weight in gold—if they're lucky.

Dave has his own kind of treasure hunting to keep him busy. Perhaps, his search for rare shells will turn out to be even more exciting and rewarding than buried gold.

DAVE'S TIPS FOR JUNIOR COLLECTORS

1. Don't pick up "dead" shells along the beach. Collect shells containing live sea animals. Salt water deteriorates the shell as soon as the animal dies.
2. Bring home 2 or 3 of the best specimens. Write down the date and where you found the shell.
3. Prepare shells carefully:
Place shells in a pan of cold water. Boil for several minutes.
Remove sea animal with a piece of wire bent at one end like a hook.
Use a tool to scrape calcium from outside of shell.
4. Place shells in pure cloxor for several minutes. Be sure to protect hands when using this chemical.
5. Wash shells in fresh water.
6. Allow shells to dry thoroughly. Coat shell with a mixture of white mineral oil and paint thinner. Use 6 parts of oil to 1 part of thinner.
7. Store shell in a small box lined with cotton.

SHELL TRADE

Do you have some good shell specimens to trade with a fellow collector? Just send us your name and address and we'll print it in this section.

Those who trade shells should observe the following rules:

1. Send only 2 or 3 carefully prepared shells.
2. Include the date, names of shells and where they were found.
3. Depending on size, pack shells in a baking powder or coffee can filled with cotton.
4. Wrap can with paper and tape ends. Check with your post office to be sure you have used correct amount of postage.

JUNIOR UNDERWATER MAILBOX

The following would like diving Pen Pals. Why not add your name to the list? Just send your name, age and address and it will be printed in *Skin Diver Magazine*. Address: Junior Fin Fans, Underwater Mailbox, c/o Skin Diver Magazine, Lynwood, Calif.

... I would appreciate hearing from a club interested in having a new member.

Marvin Stewart, 13
843 E. 103rd Street
Los Angeles, Calif.

... I plan to attend Oregon State College in the Fall, and am hoping I will have the opportunity of joining the diver's club. I will be diving in South America this summer. Any letters and information will be appreciated.

Bill Gilmer
13300 S. W. Fielding Rd.
Oswego, Oregon

... We are starting a club for teenagers. Any one interested please contact:

Richard Abruzzo, 17
15 Durgess St.
Staten Island 4, N. Y.

John Lauetta, 17
131 Providence St.
Staten Island 4, N. Y.

JUNIOR PEN PALS

Grover Smith Jr., 13
Ross St.
Concord, N. Carolina

Danny Russell, 14
3582 S. Sherman
Portland, Oregon

Art Gomery Jr., 17
1692 W. Norton Ave.
Muskegon, Michigan

John Shatford, 13
Box 310
Marmora, Ont., Can.

Jim Nielsen
212 S. 18th
San Jose 27, Calif.

Barry Bergen, 11
27 Roalin St.
Dorchester 24, Mass.

Danny Boyd, 15
Country Club Rd.
Chapel Hill, N. C.

Mike Olson
2548 S. E. 36th
Portland, Oregon

Tom Pledge, 17
101 Cold Spring Rd.
Stamford, Conn.

Steve Tieman, 13
Rural Route No. 2
Churubusco, Ind.

Frank Lambert, 16
4965 Roslyn Ave.
Montreal, Canada

Diek Ecker, 17
P. O. Box 43
Walloon Lake, Mich.

David McFarland, 9
1976 Malvern Rd.
Columbus 21, Ohio

Marsha McKinley, 13
1793 N. Adams Rd.
Birmingham, Mich.

Robert Bolick, 13
9534 Hayvenhurst
Sepulveda, Calif.

Brad Wallace, 14
187 N. Clay St.
Coldwater, Mich.

J. Bagwell, 15
170 Hamilton Rd.
Chapel Hill, N. C.

Frank Thorley, 12
402 E. Wadsworth
Houghton, Mich.

Harry Alphin, 14
2727 De Anna Rd.
San Diego 9, Calif.

Alex Taylor, 14
Morgan Creek Rd.
Chapel Hill, N. C.

Wayne Love, 14
Route 1, Box 288
N. Little Rock, Ark.

Jonathan Zerby, 13
31 Fairhaven Dr.
Midland Park, N. J.

Donald Golbeck, 12
15 Euler Ave.
Kitchener, Ont., Can.

Tony Vinciguera, 18
107 Culbert St.
Syracuse 8, N. Y.

Larry Boyles, 17
2304 Sage St.
Colorado Springs, Colo.

Susy Idstad, 8 1/2
5317 Windsor Ave.
Minneapolis 24, Minn.

Lois Cruciana, 16
3101 June Dr.
Dallas 11, Texas

John Each, 16
17816 Shaw Ave.
Lakewood 7, Ohio

News Current

NEWS FROM AROUND THE GLOBE COMPILED AND EDITED IN SKIN DIVER OFFICES. Local diving news from readers welcomed.

ANN ARBOR, MICHIGAN—Terry Klump, 17-year-old diver who discovered an old Indian dugout in Whitmore Lake last summer, is looking for a museum that wants to put the historic item on display. The dugout was a curiosity for a while and then became a forgotten item in the youth's backyard until it was learned the item was of historic interest. Naturalist Rainer H. Brocke of the Kensington Park Museum staff estimated the dugout was at least 150 years old and was of a type rarely found in Michigan waters. The naturalist said the dugout was like the ones found in Florida and the far southern states.

CHICAGO, ILLINOIS—Divers under the direction of Sheriff Frank Sain searched the Chicago River for a gun used in the slaying of a narcotics informer.

MAINE—The State House of Representatives has passed a bill to restrict skin divers from taking lobsters. The bill is now slated for the Senate which is expected to pass it. The bill permits lobstering only by traps anywhere on the coast of Maine. Excerpts from Commissioner Ronald W. Green's brief delivered to the House Committee included the statement that although divers aren't allowed to dive for lobsters, "any diver who meets the requirements necessary to obtain a lobster license is perfectly free to fish for lobsters like any other citizen—provided that he fishes for them by trap."

WASHINGTON, D. C.—Dr. Charles O. Handley Jr. of the Smithsonian Institute and a member of the Commission on Marine Mammals of the American Society of Mammalogists, is desirous of any information relating to the strandings of whales, porpoises, dolphins, seals, etc., on the coast of North America. The committee is attempting to establish complete records on this subject. Any divers coming across a stranding should get in touch with Dr. Handley at the Smithsonian.

PACIFIC OCEAN—An intriguing sea quest has been launched by the Beaudette Foundation for Biological Research of Solvang, Calif. Scientists there are interested in a mysterious strip of the Pacific Ocean stretching from Panama to Baja California, Mexico. In that area fish grow to tremendous sizes and seem to be immune to disease. Research is expected to reveal whether the water contains some medical ingredient which might benefit man.

CAPE CANAVERAL, FLORIDA—Cape Canaveral, the name almost synonymous with giant rockets and space missiles, now has another claim to fame. A huge stock of calico scallops, apparently more extensive than any previously known scallop bed in the world, has been discovered along the east coast of Florida within sight of the launchpads of Canaveral.

OREILLE, IDAHO—Members of the Fairchild Diving Club, the Penguins Diving Club and the Spokane Diving Club raised a 1928 Peerless sedan which had been submerged thirty years under sixty feet of water in Lake Pend, Oreille, Idaho. Members of the Historical Auto Society of Spokane, Wash., plan to put the car on exhibit at a motor fair. The car was surfaced once by the divers, but one of the drums used to raise it tipped over and lost its air supply causing the vintage auto to sink again to the bottom. Later that day they surfaced it and towed it to shore where inspection showed the car was probably running when it ran into the water as the ignition was on and the temperature gauge was stuck at 110 degrees. The odometer read 12,555 miles.

LOS ANGELES, CALIFORNIA—During the season of Lent Von's Grocery store in Westwood spruced up their fish department with a diving theme display. The store was winner of the grocery chain's annual Lent contest.

MALDIVES ISLANDS—The Maldive Islands in the Indian Ocean west of Ceylon are currently the scene of an intensive lobster survey with a goal to boost the economic resources of the islands. The survey is being conducted by skin divers headed by Rodney Jonklass.

CORONADO, CALIFORNIA—A Navy underwater demolition team headed by Lt. Jon Lindbergh saved a swimmer who had unsuccessfully attempted to rescue another man in heavy surf off the Hotel del Coronado.

NEW LONDON, CONNECTICUT—Members of the Hartford Gillman Club recently aided police in the recovery of a 120 pound safe from Smith's Cove. The search started when some of the safe's contents were found floating near the cove and was climaxed two hours later. Inside the safe were found bank books totaling \$20,000, valuable papers and a small live fish. Still missing is a variety of valuable jewelry.

ALEXANDRIA, VIRGINIA—The "International Rescuer" is preparing a list of diving training manuals for publication and is asking cooperation compiling the list.

QUEENS, NEW YORK—Police issued a city-wide alarm for a missing scuba diving outfit that will mean almost certain death to anyone who uses it. The double tanks are filled with nitrogen instead of compressed air. The tanks were taken from the car of David Aliskavich.

SOUTH AFRICA—An underwater research team is being set up by the South African Council for Scientific and Industrial Research. The decision to include divers in its personnel was taken by the council because of the frequency with which it has been called upon to make underwater observations in rivers, dams, lakes and the sea. Following a training program at a Pretoria pool, men will be picked for the new team.

NEW YORK—Divers working blind under the East River are playing a major part in the city's efforts to control water pollution. Their job is to jockey 64-ton sections of concrete pipe into trenches. They position the pipe and make a water tight seal between sections—all in the dark following a surveyor's line they can't see. The pipe, 14 feet in diameter, presents problems to others besides the divers. Too large to get through the city's tunnels, it must be trucked from New Jersey to Staten Island and then brought to the site by barge.

LYNN, MASSACHUSETTS—The Neptooners Skin Diving Club has decided to sponsor an Explorer Post of skin divers. The post will be open to high school boys regardless of previous scouting experience from the Greater Lynn area.

WILMINGTON, NORTH CAROLINA—John Waggett and Allen Blake discovered the anchor of a Confederate ship the Fanny and Jenny in 1957 and last month realized their plans to salvage it. The divers surfaced the 400 pound anchor a little more than 98 years after it went to its watery grave.

FORT LAUDERDALE, FLORIDA—The Broward County artificial fishing reef project was permanently grounded by the U. S. Navy as a threat to the defense of the United States. Bahia Mar manager Sam Shelsky, general chairman of the project, received notification that the reef project was ordered disbanded in a letter from Rear Admiral E. C. Stephan, chief of the Navy's Hydrographic Office in Washington. Adm. Stephan said the Navy's decision to ban the reef was based upon serious consideration and in the best interests of national defense. The reef was labeled as a sanctuary for hovering or bottomed enemy submarines, a screen which current U. S. detection devices could not penetrate and would also introduce conditions which would prevent effective mine laying, mine sweeping and mine hunting operations by adversely affecting magnetic sensing devices. The reef committee had dumped 108 wrecked auto bodies in 120 feet of water 1.7 miles off the end of NE 10th street last year in an effort to promote a fish sanctuary and had planned to drop another 500 this year.

(Continued on Page 48)

THE MARK OF QUALITY



Because of its unsurpassed design characteristics, the world famous "Aqua-master" two stage regulator remains the most versatile and efficient regulator ever developed. The testament of this fact is the almost exclusive approval and use of the "Aqua-Master" by the military services, leading Oceanographic Institutes and by thousands of professional divers the world over.



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DRIFTWOOD

Please address all notes, letters and stuff to:
"DRIFTWOOD"
Skin Diver Magazine
Lynwood, California

"I got me this theory. When folks die, I don't think they go to heaven at all. I think their souls go into the sea where they turn into fishes. And the ones with them mean, little curled-up souls turn into seaweed."

—Shanty Dan

The Pier At The Edge Of Another World

Hello, you alarmists . . .

It was nice of some of you to worry about me the way you did. And for those of you with mean, little curled-up souls who joyously shouted to see me absent, I have dismaying news: I'm back on the old jetty with a fresh pot of coffee—and somebody be sure and remind me to send O. Keith a Thank-You note for having the twisted courage to hold all you spirited neurotics at bay while I was down the beach a piece, collecting empty bottles and sifting the sand for loose change and diamond rings. Although the Immoral Beard's rather shoddy houseboat seems to have swung to sea with the tide, he left this mailbag full of dissention and badly chipped opinion on the jetty. How about you going through the contents while I divy up the java among the lot of us . . .

I know you've been getting a bunch of stuff from guys, yelling to have that slob Kohler back in action again. I want you to know I'm with you, O. Keith. Kohler was always highly over-rated, as far as I was concerned. And I figure the publishers finally got wise to him and gave you the job of writing a really good column. Keep up the swell work.

JOHN W. BEARD, JR.
"Another Immoral Beard"
Shell Beach, California

Har de har har!

When are you going to really improve the *Driftwood* column and devote more space to making up for all the unfair treatment Kohler gave out to us diving dolls? I know you can do it if you want to—and if you're smarter than old Loud Mouth was, you'll begin catering to the girls who love diving. If you do, you'll have a much more popular column than Kohler ever dreamed of having.

CONSTANCE MORLEY
Seattle, Washington

Lady, it's girls like you who sent O. Keith's houseboat to sea in high-gear.

Would you, please, confirm a slightly disturbing rumor for several of us divers who like to remember Kohler as the singular voice of male freedom ever heard over the babble of diving conformity. We have been told the reason he quit the *Driftwood* column can be credited to the fact that he is, secretly, editing the *Diving News* sheet. True or false?

BILL CONWAY & FRIENDS
San Diego, California

Sheesh! You guys ought to know me better than that. I would sooner direct a teenage diving club than write one mangled adverb for Diving News. Fellas, where's your faith?

I have an idea which I figured I would send along someday to Kohler, but now that he's been given the deep-six (a damned shame, too, with all due respect to you, sir) I'll offer it up to you with the assumption that you are the man of courage and basic decency Kohler was. Here's my idea: Organize a club named the Stamp-Out Star-mopism club (S.O.S.). Whenever a member sees other divers engaged in murdering starfish, he or she promptly phones the local police and reports the star-moppers as constituting a beach-danger (inferring they're drunkenly shooting spearguns at each other) or that they're contaminating the water with beer cans and old hot-dog wrappers. I think such a program of action would make the S.O.S. Club nationally famous within weeks. What do you think?

LARRY HINES
Chicago, Illinois

I think that were I not a man of basic courage and decency, I would tell you exactly where you can shove such a nefarious idea. True anti-moppers would never stoop to such dirty tactics. Fella, where's your ethics?

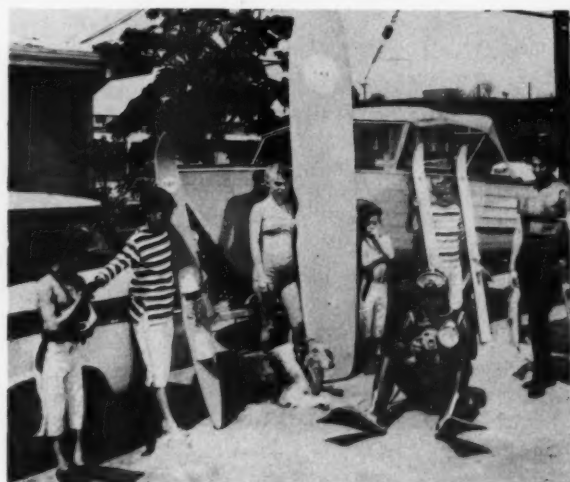
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DEPARTMENT OF HARD-SHELLED TOGETHERNESS

Whether your name is Keith or Kohler seems rather minor. The major point is: You represent the spirit of *Skin Diver* magazine. I first picked up a copy of SDM back in 1952. It was just a pamphlet then, costing a quarter. Until I spotted it, I was getting bored with Stateside life. In New Guinea, I used a modified gas-mask to dive for Cateyes. Another sergeant and I broke up the natives' monopoly and nearly put them out of business. We made more money than we ever made before . . . or since. In Okinawa, sixty beautiful, perfectly nude Japanese girl divers taught me how to maintain a pearl-bed using Japanese Rubber Water Goggles. It took a hurricane to separate me from that island. Twice, I've tried to swim back there. See that drivewayful of water sports equipment? It's all your fault. Our entire family skis, dives and surfs. We've had some wonderful vacations and paid for them by selling photo-stories to water-sports magazines. Lonnee Hodges, our babysitter, is the cutie holding the surfboard. We send the photo along to express our thanks to a magazine which has done so much for us.

CHARLES SWEET AND THE 7-SWEETS
Los Angeles, California



To merry hell with all this togetherness. How about you, Keith and me making another attempt to reach those sixty Japanese dolls?

SKIN DIVER—June 1961

DEPARTMENT OF FOAM, SPRAY, SPUME AND FUME

I have a problem you might be kind enough to advise me about. I've held off writing about it because that jerk who used up space in SDM before you took it over was hardly sympathetic to us gals who love diving—and I'm a sensitive-type who doesn't like to be laughed at. My boy-friend is a good diver and the only thing I don't like about him is his insisting that I cannot go diving with him when he and his friends get together on diving trips. I've pointed out the fact that some of his friends take their girl-friends and wives along, but he just laughs and says they've got rings in their noses. I certainly don't intend changing boy-friends, but I do think there must be some kind of argument or logic I can use to make this guy see the light.

EVELYN REESE
New York City, New York

There ain't no such logic, doll. Stick with Laughing Boy: he sounds like the right kind of husband material.

I've got the invitations all addressed and ready for mailing, I've stocked the house with good food and booze, I've decorated the pool area and I'm ready to throw the wildest *Hurrah-No-More-Kohler* party that ever swung in any neighborhood anywhere in history. Now, tell me truly: Is Kohler really gone?

GLORIA FENNELL
Hollywood, California

Sweets, I'm so gone it's too much. Naturally, you'll invite me to that swinging blast on the pool side bit, won't you?

Skin Diving is The American Way of Life. I hold with this self-evident truth and it behooves all sincere divers to defend our way of life by not only exhibiting good sportsmanship and fairness, but also with courage and dignity and common-sense whenever the many enemies of Skin Diving put our way of life under attack. Are you with me on this commitment?

JUSTIN CRANDALL
Portland, Oregon

Well, not exactly . . . but I'm willing to stand over here on the sideline and cheer for you with tears in my eyes.

I've heard that in order to be a really good skin diver, one should refrain entirely from consuming alcohol. This troubles me because I'm interested in the sport, but I'm a guy who also likes to spend an evening in a friendly bar with cup-lifting associates—and the prospect of a drink-less diving life surely is a bleak thing indeed. Will you give me the final word on this matter, please?

HOWARD PETERSEN
Fond du Lac, Wisconsin

Speaking from the rich, colorful files of mine own experience, I must admit diving with a hangover can be something of a trial—but I have known sturdier types to avoid this brand of pain by simply stopping-off for a couple of very Bloody Marys on the way to the water. The trick, you understand, is not to stop-off too long lest you hit the depths glowing with more than good health and normal enthusiasm.

I'm not a girl to put the knock on anybody's sincere efforts—whether I personally dig those efforts or not. Nevertheless, O. Keith, your houseboat just isn't reaching this woman's heart like the old jetty once did. I don't know whether it's your conservative tone of voice or the fact that I sense a degree of emotional indifference toward the poor, twisted characters who hunger after the love and attention Kohler gave them—after his fashion. Can't you bravely commit yourself to a strong, manly stand on something and let all us neurotic girls twitter in the stimulating knowledge that there does exist the kind of exciting man we wish we could catch?

MONA ROBERTS
Brainerd, Minnesota

You can stop putting the make on O. Keith, babe, and come at me with all that thinly veiled desire glittering in your eye: I'm back and ready for adventure.

It's my considered opinion that the space wasted upon *Driftwood* might be better devoted to articles of substance and fact. There are many skin divers who, like myself, view the sport with a serious mind, you know.

FRED TUCKER
Biloxi, Mississippi

Yeh, I know—and I try not to think about the whole damn bunch of you, out there, sternly viewing what began as a lighthearted pastime and has degenerated into a grim competition.

SKIN DIVER—June 1961

Why all these joyous shrieks of hilarity over *The Conklin Report*? Everytime you use one I feel like vomiting. I know they're supposed to be pretty funny, but they leave me cold. I've read funnier stuff in the obituary columns. How about adding an element of real humor to your column? Kohler couldn't do it. Maybe you can't, either.

THOMAS YOUMANS
Daytona Beach, Florida

If you read obituaries for laughs, I doubt that we can even begin to please you, creep.

I have some inside information as to exactly where Carl Kohler is, this very minute. Not an hour ago I spotted him in the main tank at *Marineland Of The Pacific*. He was cavorting with the fish and looked like a very happy man. Anyway, this proved to me that all the past charges levelled against him, as being a fake when it came to diving, were false.

WARREN HICKSON
San Pedro, California

Dammit, I wasn't cavorting. I was making a buck, raking the sand. Somebody told me I could find loose change and diamond rings in there.

My partner and I have decided to package dried Urchin Glop and try marketing it for suburban lawns. Can you possibly put us in touch with Kohler? We'd like to cut him in on this operation for old times' sake.

DICK NEWMAN
San Onofre, California

Listen, you guys—stay outa my racket.



UNCLE KOHLER ON VACATION
(Courtesy of Triad, U. S. Navy)

. . . and I'm not gonna let you leave the old jetty until I have your whimpered promise to be out here again, next month, to help me handle all the weird stuff washed in by a freak-ish tide.

CARL KOHLER

NATIONAL ASSOCIATION OF UNDERWATER INSTRUCTORS

By NEAL HESS
EXECUTIVE SECRETARY



Patio and pool area from dining room of Galt Ocean Mile Hotel where Ft. Lauderdale NAUI course will be conducted. (Photo by Sante, Schwarm, Sheldon, Inc.).

THE National Association of Underwater Instructors (NAUI) is conducting three national instructor training, testing and certification courses in 1961. These will be held August 6-12 in Brookfield, Wisconsin, which is close to Racine, August 13-19 in Ft. Lauderdale, Florida and August 13-19 in Toronto, Canada. The purpose of the courses is to teach competent divers the latest methods of instructing skin and scuba diving, to test their ability to teach and to determine their knowledge of diving principles. Those instructors who pass all the tests are certified by NAUI as professional Underwater Instructors. It should be emphasized that the primary purpose is to teach instructing methods for underwater recreation and the emphasis is on giving each student adequate knowledge to be a successful instructor.

There is a tremendous and ever increasing

need for competent instructors of underwater sports. Last year we estimate that at least 100,000 persons learned to go underwater for the first time and that the number will be larger this year. These persons must have competent instruction or the sport will suffer due to the accidents of the uninformed.

The courses are open to individuals who have spent at least 100 hours underwater and who have developed through study, the fundamental understanding of diving principles. The course is open to those individuals who place greater emphasis on caution and thought to diving rather than to those who place emphasis on bravado.

Each potential instructor who comes to the course should have studied "The Science of Skin and Scuba Diving" available through Skin Diver Magazine's Underwater Bookshelf and "Educational Psychology in

the Classroom," by Henry Clay Lindgren from John Wiley, Publisher, New York, New York. Each instructor candidate should bring all his diving equipment except tanks which will be furnished by NAUI at the course location. Regulators will be available for those who prefer not to use their own.

Each instructor candidate will be assigned to a team of four instructor candidates, and those wishing to share rooms with their team mates may do so at a rate of \$3.50 each for the four man room.

NAUI will provide the highest calibre instructors available at the time. There will be an open water trip and a graduation dinner provided by NAUI. Each graduating instructor will receive a diploma signed by NAUI's Board of Directors and will be authorized to wear the newly designed National Association of Underwater Instructors' patch, as well as issue NAUI student cards to graduates of their future courses. Each graduate will receive NAUI's bi-monthly newsletter which tells of the latest sources of information regarding diving instruction. In addition, NAUI will establish a file in Lynwood, California, which will contain an outline of the course each certified instructor is teaching.

During the course, the instructor candidate will be tested for physical fitness, teaching ability, pool and open water ability and understanding of basic diving principles. Each test is designed to teach as well as test. Those candidates who have weaknesses will have the opportunity to rectify these before certification via a second test at a later date.

Perhaps the greatest source of instruction information will come from the team mates who will discuss with each other the diving and teaching conditions in the area from which they come.

The Ft. Lauderdale course will be held at the beautiful Galt Ocean Mile Hotel located immediately on the ocean. The Brookfield and Toronto course will be held in the new modern diving facility of the region and candidates will reside within a half-mile of the pool and classrooms. At each course there will be available side tours for those accompanying the instructor candidates to the courses.

We expect that this action packed week will bring you and your students the utmost in diving instructing techniques. The cost of the course is \$75.00 which includes instructing, testing, the open water trip and graduation dinner. We are looking forward to meeting you personally.

COURSE OUTLINED

Sunday, 1-7 p.m., Registration.
Monday, 8-9 a.m., Introduction; 9-11 a.m., Teaching Techniques; 11-12 a.m., Diving First Aid; 1-3 p.m., Diving Physics; 3:15-5:30 p.m., Swimming Techniques; 7:30-9:30 p.m., Medical Aspects of Diving.
Tuesday, 8-10 a.m., Medical Aspects of Diving; 10-12 a.m., Teaching Techniques; 1-3 p.m., Medical Aspects of Diving; 3:15-5:30 p.m., Skin Diving Techniques; 7:30-9:30 p.m., Practical Teaching.
Wednesday, 8-10 a.m., Equipment; 10-12 a.m., Teaching Techniques; 1-3 p.m., Life Saving; 3:15-5:30 p.m., Scuba Techniques; 7:30-9:30 p.m., Practical Teaching.
Thursday, 8-12 a.m., Oceanography and Marine Biology; 1-3 p.m., Practical Aspects of Teaching Skin Diving; 3:15-5:30 p.m., Scuba Techniques; 7:30-9:30 p.m., Practical Teaching.
Friday, 8-12 a.m., Legal Aspects of Diving; 1-3 p.m., Teaching Techniques; 3:15-5:30 p.m., Scuba Tests; 6:30-9:30 p.m., Four Hour Written Test.
Saturday, 8-12 a.m., Open Water Dive; 1-5:30 p.m., Open Discussion; 7:30-9:30 p.m., Certification Banquet.
Brookfield Instructors... Mr. Dainoff, Mr. Erickson, Mr. Jacobs, Mr. Ham, Mr. Tillman.
Ft. Lauderdale Instructors... Mr. Jones, Capt. Howland, Capt. Duffner, Mr. Ham, Mr. Tillman.
Toronto Instructors... To be announced.

NATIONAL ASSOCIATION OF UNDERWATER INSTRUCTORS

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City..... Zone..... State.....

Strong Subject..... Weak Subject.....

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Box 111, Lynwood, Calif.

IMPORTANT ANNOUNCEMENT—The N.A.U.I. course scheduled for Brookfield, Wisc., has been moved to Chicago, Illinois, for greater student convenience. Same dates, Aug. 6-12.

INSTRUCTOR STAFF



CAPT. GERRALD H. HOWLAND

Captain Howland is a member of the United States Air Force and serves on the Board of Directors of the National Association of Underwater Instructors. He is an Air Force Instructor Trainer at Keesler AFB, Miss.



MR. NEAL HESS

Mr. Hess is instruction editor of "Skin Diver Magazine" and Director of Instructor Certification, Underwater Society of America. He is a professional engineer and a graduate of Harvard. He is primarily responsible for the formation of the National Association of Underwater Instructors.



MR. JOHN C. JONES, JR.

Mr. Jones is Director, Underwater Training, Broward County, Florida Red Cross. He pioneered the training of diving instructors in Florida and his course lesson plans are now used by many of the top instructors in this country.



MR. AL TILLMAN

Mr. Tillman was Director, Underwater Activities, Los Angeles County Department of Parks and Recreation. He is responsible for the most advanced program for the certification of diving instructors. He has edited "Underwater Recreation" published by L. A. County.



CAPT. GERRALD J. DUFFNER

Capt. Duffner is in the Medical Corps, U. S. Navy and is the Director of Submarine Medicine Division. He is also a research consultant at the Navy Experimental Diving Unit and a lecturer at the Naval Deep Sea Diving School.



MR. RUSSELL P. JACOBS

Mr. Jacobs is a National Association of Underwater Instructors graduate and owner of Brookfield Skin Diving Supply and School in Brookfield, Wisconsin. He is also a Waukesha County Sheriff's Department diver.



MR. JERRY DZINZELETA

Mr. Dzinzeleta is a National Association of Underwater Instructors graduate of the Houston class and is responsible for creating the fresh water instruction course approved by NAUI.

MR. HAL LATTIMORE

Mr. Lattimore is a practicing attorney in Fort Worth, Texas. He is legal counsel to the Underwater Society of America and has been diving for over ten years.

OCEANOGRAPHY

By ROSS R. OLNEY

[Fifth of a series on the importance of
oceanography in the next ten years]

Artificial Radioactivity In The Marine Environment

THE MOST recent boon to mankind has been the development of atomic power, but with this wonderful source of good things for man has come a problem . . . the disposal of atomic wastes. Again, man turned to the sea. But even in the broad, deep expanses of the oceans of the world, control is necessary to prevent serious pollution and possible future tragedy.

Two things are necessary in the disposition of radioactive wastes in the sea. One, isolation of the materials so that man does not again come in contact with them and two, dispersal in order to keep concentration low in any given area. But, as yet, our knowledge of certain specific factors is too fragmentary to assure the two necessary points. For example, we need to know the exact physical and chemical state of the pollutant, the radioactive decay rate, location of release, the exact dispersal by both mixing and advection, reaction with suspended materials and sediments and reaction with the area's biota. Thus precise prediction of the results of any given radioactive inoculation of the sea is impossible without a long-range research program and engineering studies of proposed waste-disposal areas.

Assuming this program will be carried out, control and monitoring, necessary even now, will become most important within the next few years. And where present control is handled by several government agencies, a single controlling body is recommended. With legislation, conservative preliminary regulations on a national level and open to modification as needed, the problem can be approached.

With the monitoring done by some agency other than the regulating and operating agency, waste disposal can be sensibly and safely controlled.

An international agency, subject to the Law of the Seas as adopted by the Geneva Convention, can be formed by the governmental groups of different nations.

Our present knowledge on the research needs of coastal and estuarine environments is such that at least a pattern can be deduced to put them into representative types. Then the large scale features of dispersion of an introduced contaminant can be estimated for each of these types. But little is known of the details of water movement and mixing in estuaries. Synoptic observations of current velocity and salinity at individual points in the mass of water are lacking.

Detailed studies then of the circulation and mixing in at least four representative types should be accomplished. These four types are coastal plain estuaries, inverse estuaries, fiord type estuaries and bar built estuaries. Offshore coastal waters, including the continental shelf, offshore banks and approaches to major harbors also fall into the area needing far more research. These regions are not only most exploited by man but also most accessible to present and potential waste deposits.

The motions and distribution of currents, temperatures and salinity in these areas must be discovered before wastes are deposited. Studies of tracer elements introduced into the water will help. Utilization of hydraulic models and development of mathematical tables allowing machine computation is a requisite for such a research program.

Of major importance to the international group would be the open oceans. Within the foreseeable future, it is possible that very large quantities of radioactive wastes will be deposited in the oceans as a result of nuclear fission power reactors. And weapons testing is not the only source. Consider the possibility of the sinking of nuclear powered vessels, more and more of which are being constructed.

Below the first 75 meters, which is the area where most of man's food harvest is obtained, the temperature of the open ocean decreases rapidly while the density increases. This is the thermocline, or pycnocline. From there to the bottom is relatively stable in regard to temperature, pressure and salinity, the pressure of course increasing slightly. Radioactivity introduced into this deep water will be partially isolated from the upper layer for at least several decades, perhaps several hundred years. And during this time there will be a decrease of radioactivity due to decay, and dilution due to dispersion. The depths of the sea then seem to be the only safe place at present to deposit the tons of fission products.

But this amount could easily be increased by thousands of tons within the next few years. We must know how these materials, in solution, will be dispersed throughout the deep waters and how much will eventually enter the upper layers, into man's harvest area.

What effect will radiation have upon marine organisms? This area has, unfortunately, been largely neglected since we have learned that the more complex the organism, the greater is its susceptibility to radiation damage.

Experiments are presently being conducted to determine the affects of radioactive waste disposal in coastal and deep ocean waters but far more research is needed. Radiological contamination at sea, waste disposal, and a better understanding of uptake by the food chain are problems of international importance. To solve these problems, the cooperative efforts of all interested scientists are needed. In spite of a somewhat pessimistic approach, the possible effects of a nuclear war on the marine environment should be studied.

With such a research program a much better estimate of the quantities of radioactive materials which could safely be introduced into the various types of marine environment would then be possible.

Next Month—New Research Ships
Reference, *Oceanography* 1960-1970, National Academy of Sciences



THE SALT WATER AQUARIUM IN THE HOME

By

Robert P. L. Straughan

WITH the recent increased interest in the sea and its wonders, more and more people are finding that a bit of this fascinating world can now be brought directly into their home. Marine aquariums,

just a few years ago highly impractical if not completely impossible, are now being successfully maintained by hobbyists everywhere. And not only by coast dwellers . . . small, inland farm communities, areas far from the sea and its beauty, may soon have the lion's share of such units.

Why? Because with recent discoveries and inventions in this field, maintenance of the marine aquarium is now not only very practical but most enjoyable. And of the many books on the subject, "The Salt Water Aquarium in the Home" by Robert P. L. Straughan has done the most to acquaint collectors and prospective hobbyists with the "how to" of the pastime.

Mr. Straughan, a full-time fish collector and distributor, has spent thousands of hours under the sea collecting and observing the beautiful and strange marine life there. Besides in the numerous tanks in his home and stores, his specimens are displayed in many of the large salt water public aquariums in the United States. With regular articles in the major aquarium publications and his own chain of pet stores in Florida, including the only store in the world devoted exclusively to salt water fish, Mr. Straughan is well qualified to author a book of this type. Containing over 100 photographs, taken by the author of fish he successfully keeps in his own private tanks, the book makes excellent reading for anyone contemplating this hobby.

But how does one get started? In the first three chapters of Mr. Straughan discusses the salt water aquarium and its limitations, setting it up and maintaining it after choosing the proper type and size, and exactly what can be expected regarding accidents, diseases, expenses, etc.

Mr. Straughan takes exception to the words of other "experts" with hard, cold facts backed by personal experimentation. He has found, for example, that particular species which have been given a bad name by other collectors are very hardy and pleasant specimens in his own tanks if handled right. Then, in this enlightening book, the right handling is explained.

Common fish, strange fish, odd fish and grotesque fish are listed, many with accompanying photographs, and their care and feeding is discussed. Each fish listed is or has been in Mr. Straughan's tanks, thus adding authority to his words.

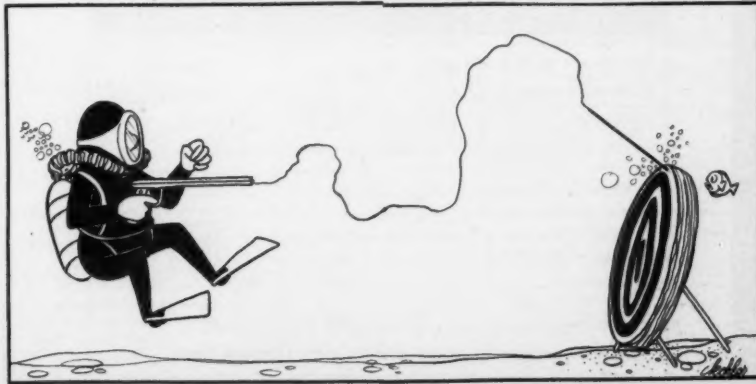
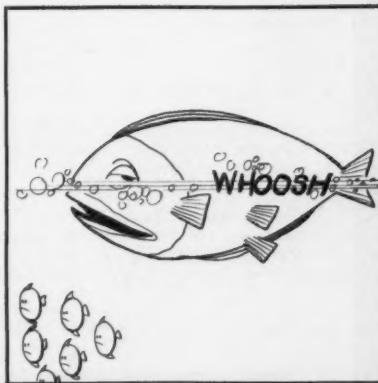
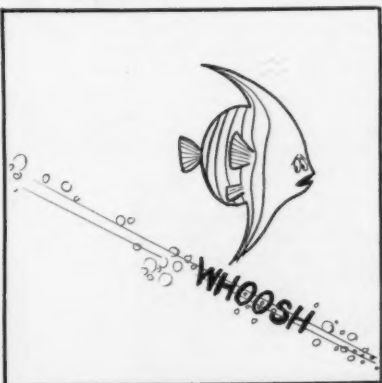
A chapter is devoted to collecting, with some of Mr. Straughan's humorous and near tragic experiences in this field.

But probably of most interest to the prospective hobbyist; each aquarium discussed in this book is of the self-sustaining type. That is, its success does not depend, as in many cases, on circulating sea water. And each fish discussed is able to survive and grow, with a few noted exceptions, in such a tank. "The Salt Water Aquarium in the Home" is a book for the collector who perhaps does not have the ocean at his doorstep.

Tank size for each fish, specific groupings of marine inhabitants and what each prefers to eat, and even ways to "trick" these strange creatures into enjoying available food is revealed in the book. The last chapter, in fact, is one long "menu" with different foods noted for each fish listed.

For anyone interested in marine life, this book is fascinating. For the prospective hobbyist, it is indispensable. Published by A. S. Barnes and Company, it can be ordered through SDM's Underwater Bookshelf, book number 47.

THE FISHES by Kohler



DIVERS' FASHIONS



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NOTICE: All our suits (Men's or Women's) are made with a protective spinal pad, double knees and double elbows. These as well as all seams are fused by their 45° angle secret fusion method. This makes your suit last twice as long and enable us to GUARANTEE it against defects in manufacture for ONE FULL YEAR.

3/16" SKIN 2 SIDES For the whole works as above a \$49.95 value custom full suit for: **\$3500**

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6 1/2" heavy duty stainless serrated blade, non slip handle, locking sheath. Best we've found!
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BOATING SUGGESTIONS WINNERS

Kenneth Fritz
6 Ribic Road
Wallingford, Connecticut

Mr. Fritz' suggestion . . . If you have a boat which is large enough (14 feet or more) and you are a spearfisherman, two large threaded hooks screwed under the dashboard about thirty-six inches apart makes an ideal storage place for spearguns. The gun will not be stepped on and is kept away from any children in the boat.

Sgt. Jim Syling
New Mexico State Police
Box 1049
Farmington, New Mexico

Sgt. Syling's suggestion . . . Instead of flying one Divers Flag, make a wire frame which, when two flags are attached, displays the flags at right angles to each other and thus visible from any direction. Normally, when approaching a boat with or against the wind, a displayed flag would be very difficult to see unless flown as described above.

Richfield Oil Places New Artificial Reef

On December 15, Richfield Oil Corporation completed construction of a 120-carbody artificial fishing reef just seaward of Richfield's Rincon Island, half a mile out in the ocean, south of Santa Barbara, California. The reef, installed with technical advice from the California Fish and Game Department, is marked at the four corners with buoys so that divers can easily locate it. The new habitat development for the benefit of sport fish is about 50 feet beneath the surface so as not to menace navigation. The reef has been turned over to the Department of Fish and Game for their operation, maintenance, and study. It's an encouraging sample of Richfield's outstanding policy-in-action of multiple use of its lands and facilities. This instance was one effort by Richfield under its progressive policies to increase the fishing use of offshore tidelands under lease from California.

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Aqua Sport Divers

16015 EAST 8 MILE ROAD
EAST DETROIT MICHIGAN



Common name:
Tuna, Bluefin
Scientific name:
Thunnus thynnus
Weight: 22 lb., 3 oz.
Where caught:
La Jolla, Calif., U.S.A.
Date: 1953
Diver: Albert O. Larson

International Underwater Spearfishing Association

WORLD RECORDS

Although the Bluefin tuna has been previously publicized, this catch is quite rare among underwater spearfishermen and coming in alphabetical sequence, again deserves mention.

Although other members of the tuna family (*Thunnidae*) have been observed in Pacific waters, the Bluefin is the only claim that has been recognized by the I.U.S.A.

The Bluefin tuna reaches a weight of about 250 pounds in California waters and about 1600 pounds in the Atlantic. As late as 1948 Atlantic and Pacific Bluefin were believed to be the same species. Since that time there have been indications that they are probably different.

Five so-called tuna are taken in California of which only three belong to the family, *Thunnidae*. These are Skipjack, Bonito, Albacore, Bluefin and Yellowfin of which the latter three are classed in the same family.

A claim for a 57 pound dog tooth tuna from the Indian Ocean has been filed with the I.U.S.A. but the necessity for positive identification will delay its recognition until a later date.

Among the speedier pelagic fishes inhabiting the seas, it has been observed by skin divers that the Bluefin tuna and the Albacore do not travel at speeds that are inimical to their capture by underwater spearfishermen when these fish are not feeding.

Observations made in the San Pedro channel by the I.U.S.A. seems to indicate that the Albacore in their northward migration, travel at speeds only slightly in excess of the Yellowtail (*Seriola dorsalis*) that have been taken around the Channel Islands of California. This should make their capture possible to the skin diver willing to venture ten to twenty miles from shore and hunt for them in deep water. To date no claim has been made for Albacore.

The spear that was used to make the only known capture of a Pacific tuna by an underwater spearfisherman was of homemade design. Albert Larson calls it the Addicts rubber gun after the club to which he belongs. He states that he was swimming outside the kelp bed at La Jolla and that there were a number of tuna approximately 15 feet below the surface. He also states that he was surprised that the fish handled so easily. ➤

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- No. 255-1 De Luxe Boots only, 1/4" **9.95**

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NEWS CURRENT

(Continued from Page 34)

BLADNOCH, SCOTLAND—A distillery workman turned the wrong tap today and 5000 fifths of Scotch whisky drained into the River Bladnoch. The whisky lost to the fish was valued at approximately \$28,000—that will pickle a lot of herring.

FUKUOKA, JAPAN—Japanese fishermen in North Kyushu tackled a whale of a job when they sailed into Hakata Bay, corralled and beached 100 small whales. When the village fishermen reached the shallow water they jumped in, tied ropes to the whales' tails and dragged them ashore.

GREENWICH, CONNECTICUT—Greenwich Police divers are attempting to recover a metal box taken in a burglary reportedly containing narcotics.

SEATTLE, WASHINGTON—A biochemist's existence for 26½ hours on plant produced air in a sealed tank in Seattle was hailed by the Air Force as a long step into space. Joseph McClure survived by breathing oxygen generated by slimy green algae. The water plant had converted carbon dioxide exhaled by McClure into oxygen.

ATLANTIC CITY, NEW JERSEY—The Lakehurst Naval Air Station fire department diving team under the direction of Jim Caldwell recently completed the recovery of secret papers and valuables from a Navy R4Y belonging to the Secretary of the Navy. The Navy plane had crashed into the bay at Atlantic City. After completing the recovery job, the team raised the twin engine and removed it from the bay.

NEW ZEALAND—The level of the sea 4000 years ago was seven feet higher than it is today, according to research conducted by J. C. Schofield of the New Zealand Geological Survey. Mr. Schofield also revealed that the ocean is now rising at a rate of eight or nine inches a century which is connected with the recession of glaciers in practically every glacier district of the world.

MT. SHASTA, SISKIYOU COUNTY, CALIFORNIA—Skin divers are making exploratory trips along the Klamath River with a view to searching for gold deposits that are known to exist, but are difficult to locate. About 150 miles of lower Klamath River has not been mined at all. The nature of the stream and channel makes such impractical or impossible. But divers may uncover deposits where gold has lodged for countless years. Many streams in the vicinity are known to carry placer gold to the main river.

MANCHESTER, NEW HAMPSHIRE—Three members of the Manchester Police Department have organized a rescue team. The three patrolmen, Louie Messier, Bill Murphy and Fernand Morin have been working on all types of rescue and salvage work at the state industrial school swimming pool and plan to continue their training off the Atlantic coast.

CONNECTICUT—A bill concerning divers that has been introduced in the House is not meeting any opposition and is expected to be approved. House Bill 4133 would make skin divers working in an emergency eligible for death, disability and injury benefits.

MARBLEHEAD, MASSACHUSETTS—The city of Marblehead has limited skin diving and water skiing in Marblehead Harbor to the period between November and April.



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HARRISBURG, PENNSYLVANIA — While diving in a local quarry Harry Livingston of the Research Divers discovered a box car, caboose, dump truck and two bicycles. He retrieved the two bikes.

LAS VEGAS, NEVADA—Engineers of the James Montgomery Co. hired diver Harry Wham to descend 200 feet below the surface of Lake Mead adjoining Saddle Island for a topography report to assist in arriving at a decision on the type of water intake device to install there. Wham's report that the subsurface topography was similar to the exposed portion of the island showed the company it would be necessary to alter the lake's bottom by blasting.

NEW ORLEANS, LOUISIANA—Recommendations to zone off areas of the New Orleans lakefront for swimmers, water skiers and skin divers is in the hand of the city's water safety committee. The proposals were to be presented to the board of directors of the wildlife and fisheries commission for a ruling. The safety committee's proposal would limit the use of the lakefront from Orleans canal to the London avenue canal to swimmers and divers with the use of spear guns prohibited. Water skiers would not be allowed in this area which would extend 200 yards from the seawall and would be marked with plastic buoys.

ROANOKE, VIRGINIA — Roanoke's Mayor Willis M. Anderson agreed to take a "dive" at the Jaycee Boat and Sports Show. The mayor is taking diving instructions from the Roanoke Valley Aquanags Skin Diving Association who will make appearances at the Jaycee show.

WINFIELD, KANSAS — Assorted tools numbering near a thousand and valued at several hundred dollars were recovered from the bottom of the Walnut River and Beaver Creek by skin divers for the local sheriff.

NEWPORT BEACH, CALIFORNIA—Six weeks after the supposed drowning of diver Wincel Kennedy near Scotchman's Cove, the diver appeared in Poplar Bluff, Missouri. He told Orange County sheriff's department that he had faked the drowning accident to get away from his wife and two children who are now in Poplar Bluff.

BABYLON, NEW YORK — Divers and workers swarmed over the sinking 59 foot dragger Portugal in an unsuccessful attempt to keep it afloat. Divers patched the leaks temporarily and the craft was finally raised and towed into dock. The dragger sank when she sprang a leak in the keel after constant pounding on a shoal which was formed in five days from turbulent northeast currents.

RIVERSIDE, NEW JERSEY—Skin diver Sgt. John Doyle of the Riverside police discovered 40 pounds of pure tin in Rancocas Creek. The tin had been tossed in the creek after it had been stolen from a local firm.

ANKARA, TURKEY—While diving in the Mediterranean Sea off the southern coast of Turkey, Claude Mudd and Don Arnest located a type of lobster which had been found by both divers while stationed in the Azores, but never by divers in Turkey. One was brought back to Ankara and so surprised was Professor R. H. Reynolds (who is also a diver), head of the science department at Ankara College, that he took pictures and made drawings of the lobster and forwarded them to England for further study.

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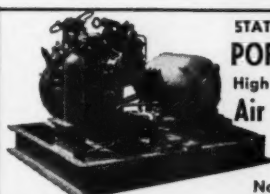
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INSURANCE AND THE DIVING DEALER

By ALLAN PETRIE

Inasmuch as insurance is basically a matter of having someone else assume a risk that you do not care to assume yourself, let's take a look at some of the risks that confront the skin diving shop.

Liability imposed by law in dealing with the public is the most serious risk. The ever fickle public and the increasing trend to high jury awards makes this an increasing problem.

Specifically, what risks of Public Liability is the skin diving shop dealer exposed to? The first and obvious risk is the operation of his business premises. The fact that the public is invited into the premises, makes the skin diving dealer responsible for any injury occurring as a result of the public's presence. Second, how about the liability that arises from instruction of students. Here again, the public has been invited and the skin diving dealer is responsible for any injury. But even further than actual injury, there exists the very real danger of alleged injury. In this matter there also lies another risk which is not so obvious. The skin diving dealer, and the teaching members of his staff, hold themselves forth as professional instructors. Therefore, suit can be brought against the individual instructor for any alleged professional negligence. Third, let's consider the risks away from the premises. How about the charter trip or sponsored trip where you take a group of divers on an actual dive? Here again, the same principle applies. You have invited members of the public to engage in an activity, and you have assumed legal responsibility for them.

A fourth area of risk lies in the sale of diving gear itself. When an item of equipment is sold to a member of the public, it is assumed that the item is safe and will function correctly for the purpose it was designed.

Let's take a hypothetical situation. A diver makes his third dive of the day to a depth of 100 feet. He knows it is 100 feet because he is wearing a new whizzo depth gauge he bought on sale at a local skin diving store. He follows his decompression tables to the minute and returns to his home port. Three hours later, he is in a recompression chamber. Why? Well, when his whizzo depth gauge read 100 feet, it was malfunctioning and he

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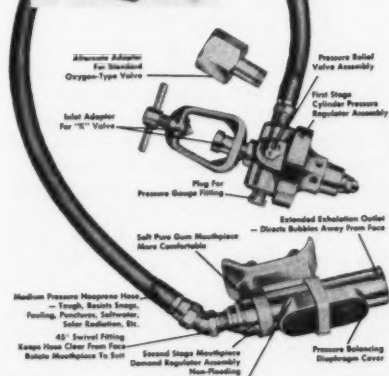
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was really at 150 feet. While this is hypothetical, it at least illustrates that there is more than just the risk of diving gear itself.

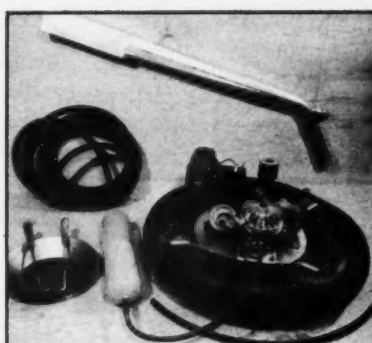
Let's pursue the use of diving equipment by the public even further. How about the gear you rent to the public. There is the same implied warranty of safety and function as in any units you might sell. Also, how about the gear you have repaired or performed maintenance upon. The implied warranty also applies. And how about certified air?

These are the liability risks inherent in being a diving dealer. Now the question is, how can these risks be assumed by someone else. To adequately cover the diving dealer's liability, a policy should specifically insure the following exposures:

1. Premises Liability covering the actual business premises.
2. Liability for Swimming or Scuba Instruction.
3. Liability for Charter Trips or sponsored events.
4. Individual Teachers Liability.
5. Products Liability for goods sold.
6. Products Liability for goods rented, repaired or maintained.
7. Products Liability for sale of certified air.

In California, one progressive insurance carrier has ventured to design a policy which fits the needs of the skin diving dealer. In so doing however, certain safeguards have been established to diminish the actual risk in dealing with the public. First, it is a requirement that all instructors utilized by the dealer be certified by either the County of Los Angeles or the City of San Diego. This will be changed as soon as recertification under the National Association of Underwater Instructors Program is accomplished. Second, it is a requirement that sales or rental of any scuba components, or certified air, be made only to those individuals who have completed a prescribed course of instruction and can present evidence of the completion at the time of purchase. These requirements automatically eliminate the possibility of an unqualified salesman selling scuba gear to an equally unqualified diver. The success of the program is borne out by the outstanding safety record established through the certification program of the Aquatics Department of the Department of Parks and Recreation of the County of Los Angeles.

A second type of risk, involves the property of the skin diving dealer. Happily this has presented no serious problems as far as existing insurance coverages apply. There are of course, risks that may not be covered in this area but only because the shop owner has chosen to assume them himself.



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DEVIL'S ISLAND DIVING

(Continued from Page 27)

day, we finally talked some Brazilian fishermen into taking us. After four hours out, we saw the Islands, thirty minutes later, we could make them out very clearly. Soon we were ashore.

The Iles de Salute, the smallest, was Devil's Island where no more than a few were kept at a time. The most famous prisoner ever kept there was Capt. Alfred Dreyfus, 1895. After him, only a few political prisoners were kept there from time to time and they were more or less free to walk around and cook their own meals with food that was sent over once a week. The largest of the three islands is Ile Royal. Here was the Commandant for the Islands, the hospital, Administration Building and barracks for three hundred prisoners who were classed, "too dangerous" to be kept on the mainland.

The third island is St. Joseph. This was the "Island of Living Hell" and the island most feared by all the convicts in the penal system. This island had one purpose, punishment, for here were three buildings that housed the solitary confinement cells called "bear pits." We were the first persons to visit Ile St. Joseph in over a year. We were the only persons on the island and as I stood on the plateau on the top of the island with the coconut trees whispering in the breeze, I got a strange feeling as I read the words cast into the archway of the main building—it read "Reclusion." The cells were 9x7x9 high—no windows, only a steel door and for a ceiling, iron bars. A guard walked a cat-walk above the row of cells and could look down into each cell as he passed. Any convict on the mainland who was convicted of a crime, mostly attempted escape, was sentenced to solitary confinement on St. Joseph anywhere from thirty days to five years. Here men went stark raving mad from prolonged seclusion. The many who died in their cells were thrown into the sea and into the mouths of waiting sharks.

The sharks around the Iles de Salute are not the non-dangerous sand and nurse shark type. They are the large South American variety. The Islands seem to have some great attraction for these sharks for at times, one can stand on shore and count hundreds of fins. After World War II there was a thriving shark fishing business operated off Ile Royal and within a short time, over one thousand were caught. I talked with one man who had done some shark fishing and he said it was only a matter of dropping the line into the water and hauling it out.

France started shipping convicts to French Guiana in 1852 and stopped in 1940 after extreme pressure was brought to bear on the prestige of France itself. Even though thousands of prisoners were shipped to Guiana, the convict population never increased, since the new ones merely replaced the ones who died the year before.

The thought passed through my mind that here is where hundreds of dead prisoners were thrown into the sea and during 108 years of doing this, the sharks must have built up an appetite for human flesh. This, combined with the stories of the viciousness of these sharks, gave me some apprehension about diving, such as I have never known before.

Usually, any apprehension I have about diving in dangerous water leaves me once I get under the surface. In this case, it grew. The visibility was two feet and I kept feeling my way down.

After leaving the shore, which drops off rather steeply, the visibility increased to ten feet. I kept looking around, straining my eyes and several times I thought I saw large

forms. I knew I could not get too far from Royal as the current between the three islands is very swift and I would be carried out to sea. After some exploring I was turned around and did not know in which direction the shore was so I made a guess and headed toward it. I broke surface near the rocky shore. The first thing I saw was my partner, Joe, and the men from the boat pointing out in back of me. I took a quick glance behind me and saw several fins nearby. All I could think of was that I had just been swimming among them. I wasted no time in climbing up the rocks and out of the water. My arms and legs seemed to have superior strength and the tank on my back seemed as light as a feather. We hailed the boat.

It was good to get back to the mainland, have a good meal and sleep in a clean bed. The next day, we took off on our return to Fort Lauderdale, Florida. The shortest distance between Cayenne and Fort Lauderdale is a straight line. However, this route would take us directly over the island of Cuba which is forbidden for private aircraft. I remembered seeing an old DC-4 in Montego Bay that had landed the day before we did, shot all full of holes. The plane was from Guatemala and it seemed that it was over Cuba, dropping supplies to the Anti-Castro forces. We had also heard that Cuba has a few jet fighters and since these and the guns they carried were no match for our single engine Bonanza, we decided to fly around the western tip of Cuba and well away from the coast. From there, we flew on to Fort Lauderdale and then to Chicago with six inches of snow on the ground.

The following day, I was back to work. I had been diving at Devil's Island just a few hours ago. I had seen sights only read about before. Though the dive had been short, with the human fed sharks nearby, it had been the accomplishment of a burning ambition. At least for the present, northern diving seems slightly tame. ➤

120 Miles

(Continued from Page 29)

and return to Houston about six o'clock Saturday morning. The friendly and able officers and men of the Wren gave the divers their full cooperation.

Our ship was anchored over the exact location with absolutely no wind, no current and a bright hot sun. It had been pre-arranged that Dr. Cliff Condit, Dr. Pierce and I would be the first three divers to go in, explore and report conditions to the rest of the divers aboard. Upon entering the warm, clear water 75 feet and deeper, the coral, fish and sponge stood out as clearly as a flower garden would against a green lawn. Here beneath me was truly a scene as beautiful and as abundant in marine life as I had ever seen in the Bahamas or off the coast of Mexico.

Upon returning to the surface and reporting 100 feet of visibility, loads of friendly barracuda and no shark of any type, our group began its long happy day of diving. The safety officers, Harry Paine and Dr. Stanley Berman, did a superb job. The Voss Compressor loaned us by Voss Manufacturing Company filled a total of 75 bottles in 7½ hours of continuous operation.

Now all we have are memories and pictures from the camera's of Bob Woods, Ben Bentliff, Cliff Condit and others, but soon a reef created from the coral and sponge gathered from this expedition will be on display at the Houston Museum of Natural History for all to see. But for those of us who were there, the winter weather with its winds and rough water cannot end too soon, so that once again we may load our equipment and head for the deep clear waters of the fabulous Flower Garden. ➤

SKIN DIVER—June 1961

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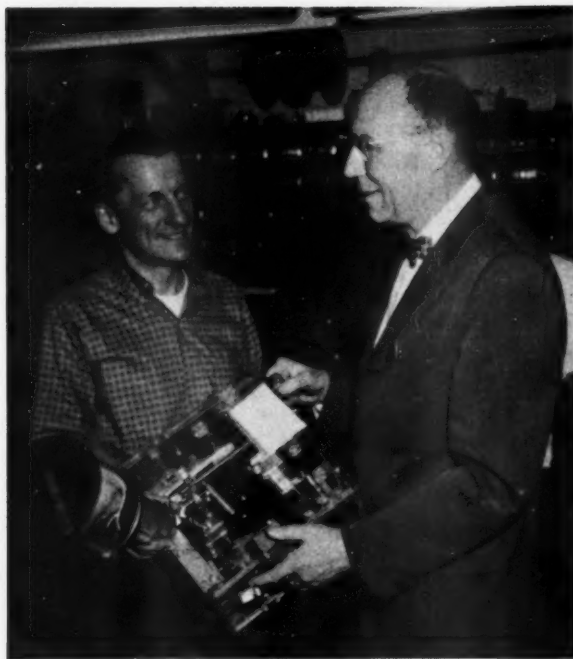
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Chicago Lakefront Situation Easing

On Jan. 13, 1961, the Chicago Park district met with representatives of the ICSSD, American Red Cross, OBC, Department of Conservation, Fire Department, Police Department, and others to formulate the projected plans for opening portions of the lake front to scuba divers.

After a spirited two and one half hour meeting near unanimity was reached by those in attendance, and the following plan was arrived at.

All divers wishing to use the areas must carry an ID card, issued by the Park District. (Having successfully passed a legitimate diving course, or the IC Divers Certification Program will qualify you for this ID card.)

Four areas of the lake will be opened: Toughy Ave., North Ave. Hook, 57th Street (west of Promontory), Calumet (just north of Coast Guard station).

Four Park District pools will be opened on specified evenings of the week to those wishing to either give or take scuba instruction. (On a non-commercial basis only.) Carver, Independence, LaFollette, and West Pullman.

The lake front areas will be marked by signs ashore and by buoys afloat. No boats will be permitted in the diving areas. A lifeguard, who is a qualified scuba diver, will be on duty at these locations.

Further meetings between the Park District and the interested organizations will iron out such details as arise.

Your IC representatives main concern, fortunately, was shared by the Park District as represented by Joe Pecoraro, in that divers should qualify divers, not a governmental agency. ➤

Starfish Blue when Bass Perches on 'em

By FRANK MOONEY

This may sound like a "fish story," but Long Island's shellfish farmers are using a Bass to help combat the starfish invasion, which came within 10% of completely wrecking the one-time \$10 million a year industry. The Bass in this case is a veteran scuba diver—first name, Herbert, of 125 Linden Street, Bellmore. An electronics engineer, Bass spends many off-duty hours combining his avocation with letting the stars get in his eyes in a practical manner.

Towed slowly by an outboard, which precedes the oyster boat, Bass tours the shellfish grounds in the 25-foot-deep waters of Huntington and Northport Bays. On spotting a starfish school, he releases marking buoys. Thereafter, the starfish become sitting ducks.

Depending on the density of the invaders, the oyster boat then lowers a suction dredge, which gathers them in up to 1,000-a-minute, or a 10-foot-wide mop with a 30-a-minute average.

George H. Vanderborgh Jr., of L. I. Oyster Farms, which employs Bass on its 1,700 acres in Huntington and Northport Bays, described the three-year battle as a "constant uphill fight." But, he asserted, by using diving and other methods, repelling the devastating invasion has reached the "mopping-up stage" along Suffolk's shore of Long Island Sound.

However, he explained, much has yet to be done on Connecticut's side, where the industry's spawning grounds were slashed 90% by the starfish and their discriminating appetites. ➤

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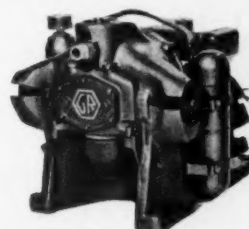
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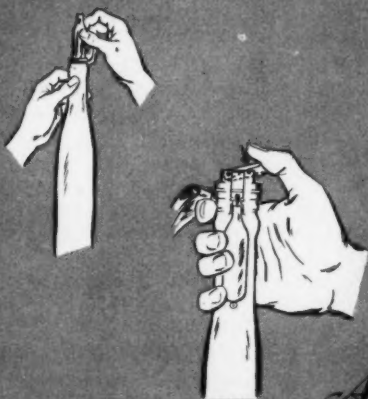
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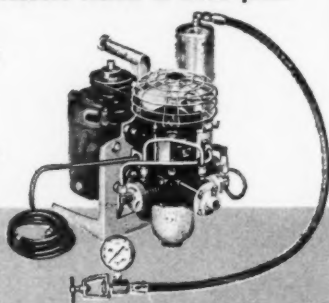
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THE BIG SALVAGE JOB

By JOHN MacGREGOR

ALMOST EVERYONE who dives soon learns it is nearly impossible to make his hobby pay, but we would like to get back just a little once in a while. Every skin diver hopes that sooner or later he will stumble on something that will make his wife feel better about "all that money" he has spent on equipment.

The day started out fine. The sun was out, the water looked clear and there was not an outboard to be seen, which is unusual for Redondo Beach, Washington.

My son, Malcolm, and I were soon finning along at 60 feet when we came upon a large concrete slab. We remembered it well because we had taken a 10 foot octopus from a hole under this slab the year before. It looked different today, for there on the bottom was stacked and coiled some 90 feet of 3" link $\frac{5}{8}$ " chain in fair condition, that once connected a buoy to the concrete slab.

To some sophisticated people it might have looked like barnacle covered chain, but we knew better. It was gold brother, that's what it was . . . money in the bank.

We snapped the battery clamp to the chain and watched the yellow mason's line unrolling from our home made white and yellow balsa wood buoy marker as it floated to the surface.

Away to the beach for a hacksaw but, wouldn't you know, the blade turned out to be too dull. Also it was hard to hold the chain steady enough to hacksaw. Time ran out so we took careful bearings before reeling in our buoy marker, and tabled the job till the next Saturday.

During the week I got to thinking; if we are going to do these salvage jobs we ought to get a little equipment. Who knows, the Andrea Doria might be next. Several of the diving shops here show a plastic bag, with eight grommets, that ought to lift about 170 lbs.

That evening I cut a 14" circle out of $\frac{3}{4}$ " waterproof plywood and jig-sawed some large holes so it looked like a wheel with four spokes. Brass flag snaps were lashed to this to match the grommets of the plastic bag. Three $\frac{1}{4}$ " roles were spliced to the underside of the plywood and a lifting hook.

The next Saturday we took the whole contraption down to the chain. The idea was to stick the lifting hook

through a link in the chain close to the concrete, then inflate the bag with the mouthpiece of our lung. It worked like a charm. The air bubbling up from the mouthpiece through the holes cut in the plywood started to fill the open bag.

The chain jerked off the bottom as the bag strained for the surface. Hack-sawing, with a new blade, was now easy. The link soon parted and swished up to the surface.

This was just dandy except that some 40 feet of heavy chain still lay on the bottom. We tried to tip the bag over and sink it so we could get more chain on the hook (now two feet from the end of the chain) before inflating it again. No dice, the chain was pulling too hard, so back to the car for a couple of five gallon paint buckets. A loop of the bottom chain was put through the bail of each bucket. Inflated they gave us another 40 lbs. each and that did the job.

A quick tour of possible buyers failed to turn our prize into money; so away to the local auction and there it sold the same night.

Now all you guys who haven't made any underwater money yet, listen to this. This salvage job cost \$4.50 for the bag and snaps, two days of work and four tanks of air. But remember you got to think big. After the 20% auctioneer's commission we collected, in cash, a total of 40 cents (\$0.40).

True some skeptical characters might say this was not a profitable venture; but no two amateur divers ever had more fun than we did on "The Big Salvage Job."

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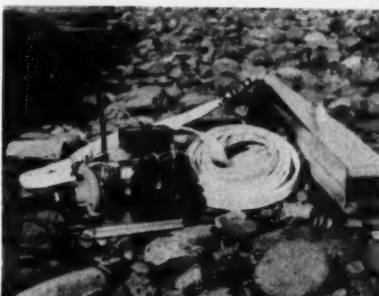
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OIL

(Continued from Page 23)

would pass my own air supply and end up with a squeeze. I opened the air control valve wide but somehow the air was just not coming through. The compressor was 35 cfm which was adequate. I wrapped my legs around the cable but it was so slippery that it did nothing to check my descent. Then I reached up and tried to climb my own air hose, hoping the line upstairs would come to an end and have to stop. It seemed there was an unending supply. I began to get a mushy feeling and then I blacked out.

Somewhere in the back of my mind I heard a girl laughing. She was joking and tugging at me. Then I vaguely recognized it as the voice of my sister. I began to wonder what had happened. My mind was buzzing and I had the sickening taste of ether in my mouth. I knew that something bad had happened to me and I was waking up in a hospital.

Someone was dipping my hands in ice water and they were very cold.

I awoke and opened my eyes. I was still in the diving gear, laying flat on my face on top of the framework. The water at this depth was cold on my bare hands, my light was shining in through the side port of the helmet. I stood up. It seemed that I had been out for a long time. Hours! The watch cap with the earphone was under my chin. There was barely a hiss of air coming into the helmet. I yelled to Frank for no other reason than to hear a voice.

No answer.

Or if there was I was unable to hear it. I looked around for the sling so that I could get the job done and get out of there. It was nowhere to be seen. Apparently the winch man had stopped a little too short when he lowered it. I yelled "Lower the sling!" as loud as I could and waited. No

sling. They weren't getting the message. I yelled again and again and was still yelling when I passed out again.

I awoke with the same buzzing in my head. I was lying on the framework again but with my helmet and breastplate hanging over the edge. Almost at once I became aware of the back of my suit filling with air. I tried to get my head up but already my legs were floating making it impossible to right myself. By instinct alone, I grabbed the edge of the framework and hung on. As punchy as I was I knew that to blow up from 220 feet* and crash into the bottom of the barge and then fall back to the bottom would kill me. Although it was hopeless I hung on till my suit was buoyed by several hundred pounds. My hands were torn loose from the angle iron and at the same time I passed out once again.

Buzzt, buzzt, buzzt. I was upright in the water and my body was twitching like a puppet on a string. My head was banging the inside of the helmet. I regained a degree of consciousness and looked over the situation.

I was all tangled up in the big inch and a half cable sling. Far below me I could see my light lying on the metal framework. I screamed my head off although not in panic. I tried to make some sense out of the mass of air hose, light cord and cable that was in front, in back and around me. It was like trying to untie an octopus. Then I heard a faint voice. In fact it was so faint that to this day I don't know how I heard it. The voice said, "do you hear me?" I yelled "pull me up!" Pretty soon I could feel the hose moving by me as they got in all the slack. I kept the hose and light cord from getting fouled in the enormous swivel-block that the sling was attached to until they had me and the light past that obstruction.

I was so punchy from being saturated with CO₂ because of inadequate ventilation, that I could not hold a

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conversation at the 30, 20 and most of the ten foot stop. Frank's faint voice asked me if I had done the job and I regretfully told him that I hadn't. When I surfaced he asked me why and I told him only that I had passed out. What really happened he will read here. As they pulled the helmet off I looked down and discovered that there was a loop in my air hose between the helmet fitting and the snap-shackle that secured the hose to the breastplate. When the hose was stretched the loop became a kink and restricted the flow of air. That had been the trouble. A kink such as this is known in the business as an A. H. and that doesn't stand for Al Hanson.

It didn't take any imagination to realize that if I hadn't fouled in that heavy sling when I blew up, I would have been dead a minute later. I admit that I was more than a little glad to get back on shore that morning.

*To blow up from 220 feet and hit the bottom of the barge could have crushed the helmet and my head with it. Or the suit could have burst and I'd have dropped again like a rock and without an adequate air supply, I'd have been squeezed into the helmet.

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Skin Diver Escapes Sea Lion

By F. D. LYON

The first instance of a sea lion attacking a skin diver on this coast—or reportedly elsewhere—occurred recently at Monterey, California.

Robert Evans, 25, of Alameda, and two other divers were swimming outside the Monterey Harbor breakwater, having been around sea lions many times without much interest shown. Evans saw a huge male lion on the surface about 30 feet away and suddenly it turned and came straight for him, diving underneath then lunging up and seizing his leg. Immediately it dived, dragging him to the bottom 50 feet down. Having just a snorkel and no tank supply, Evans held his breath, and repeatedly kicked the flipper of his free foot into the lion's eyes. It finally released its hold, but came on to attack again. More frantic kicking finally forced it to swim away.

Aided to shore by his companions, Evans was taken to the Monterey Hospital where doctors said only his heavy rubber suit saved the loss of his leg muscles. Fourteen stitches were required to close three wounds.

With no previous history of such an attack, Dr. Robert T. Orr of the Steinhart Aquarium remarks that the mammal's behavior was so unusual that it can only be accounted for by mental derangement—going suddenly amuck as a mentally deranged human being might. Usually the big lions just lazily and curiously watch intruders into their domain, with no attempt to approach or attack.

Reportedly the Coast Guard and local boatmen are on the watch for any sea lion showing erratic tendency, possibly with psychiatric treatment in mind—but more probably, extermination.



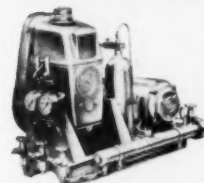
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TECHNICAL FACTS

W. LEE COZAD
ROBERT GIVEN

Technifacts is a new feature and will be used in SDM as readers dictate. If you have a technical or scientific problem or question on oceanography or any related field, send it to Technifacts, c/o Skin Diver Magazine, Box 111, Lynwood, California.

Due to a typographical error in last month's column, the first two questions, with proper answers, are repeated. Sorry

Q. Recently on a national TV program I noticed divers picking up pure manganese nodules off the bottom of the sea, is this possible and where could I find them and possibly make a profit?—A.V.O., Dubuque, Iowa.

A. Unfortunately, TV script writers get carried away with their plots at times and don't bother to check facts. First, the manganese nodules are not pure manganese but merely manganese dioxide coatings on some other foreign material (i.e. ear bones of whales, and sharks' teeth) but some have been dredged up that have many concentric layers of manganese dioxide and have therefore attained quite a large size, sometimes up to several feet in length. Secondly, as mentioned, these nodules have been dredged up from the depths, somewhere between 2,000 meters and below. They are found primarily in the southern latitudes of the Pacific Ocean but are not entirely confined to that area. Some day it may be possible to realize a profit from this valuable material but present day methods are not adequate to cope with the tremendous engineering problems that must be solved.

Q. During a recent visit into Mexican waters I noticed, while diving amongst some kelp, that there were large rings of white material that covered the kelp at times. What is this material and is it harmful to the kelp in any way? D. E. M., San Diego, Calif.

A. Without actually seeing the material I could not truly pin it down to a specific genera, but what you are referring to is a common variety of colonial bryozoan that forms in a circular pattern. It is an animal but does not live off its host, the kelp, it only uses it as a place to grow. If the colony were to enlarge sufficiently to completely cover the kelp it would no doubt cut off the existing sunlight for which the kelp depends upon for energy and in a round about way might, in some circumstances, kill the plant.

Q. On many of the Southern California beaches, at low tide, I have seen huge numbers of the small, triangular, brightly colored clam shells sticking out of the sand. What are these, are they still alive, and are they edible?—B. B. V., Chigaco, Ill.

A. The clam you speak of is the common "bean clam," *Donax gouldii*. They are alive, and are found in the surf zone in great numbers, feeding on small organic particles stirred up by wave action. Despite their small size, they are definitely edible, and are

eaten somewhat as hors d' oeuvres. After boiling for a short time, to cook the small muscle inside, the shells are then opened and the meat picked out with a small pin or some such instrument.

Q. Many times while fishing over some shallow reef of the Pacific Coast, I have heard a loud crackling sound that echoes off the boat bottom. Do you have any idea what this may be?—R. S. K., Seattle, Wash.

A. Many marine animals make noise, but the sounds you describe are probably made by the small pistol shrimp, *Crangon sp.* He has a large claw which can be cocked like a pistol, then snapped shut, creating a shock wave which can stun small worms, other crustaceans, and even small fish. The shrimp then pulls the victim into its burrow and dines leisurely. Incidentally, these little fellows make fine aquarium pets, if placed in a long glass tube at the bottom of the aquarium. They will eat bits of fish and shellfish placed near the tube, and will set up housekeeping in short order.

Q. Last year I read an article about a diver who found a large crystal of Jade. Where is the best location to find Jade and how can it be distinguished from just any old green rock?—A. L. M., Winston, North Carolina.

A. Jade is considered to be a metamorphic product and does not generally occur in crystalline form. It is a tough, hard silicate of varying composition. The Jade referred to is the Nephrite variety of Actinolite $[Ca_2(Mg,Fe)_5(OH)_2(Si_4O_{11})_2]$ which is common to California, Mexico, and some Western States. The other rarer and more prized variety, Jadeite $[NaAl(SiO_3)_2]$ is not found in California or in fact, little known to exist in the Western hemisphere. Jade is commonly associated with other metamorphic rocks (ie. serpentine and amphiboles especially around the area between Santa Barbara, California, and Monterey Bay, California, in the Franciscan formation. The large piece referred to was found by Al Tillman and is presently on display at the Los Angeles County Museum. Caves and cliffs along this area, especially around Jade Cove, California, have proved fruitful for the diligent diver. Jade can be distinguished by its specific gravity; hardness; luster; feel; but not by its color as it may be green, brown, black and even white. It has a value now of about \$2.00 a pound in the rough state for small workable pieces.

Q. I recently purchased a used underwater camera and would like to know what is the f stop and shutter speed? It is an Aqua-Cam with a flash attachment.—J. M. K., St. Louis, Mo.

A. The Aqua-Cam is a built-in camera and case combination. It is called a fixed focus camera because it has a normal fixed f stop, usually f8 to f11, and a fixed shutter speed, usually 1/25 sec. to 1/50 sec. The Aqua-Cam is approximately f8 at 1/50 sec. Although this is a relatively inexpensive camera, you can achieve amazing results with this camera, simply by removing the outer glass plate and O ring and carefully inserting a #1, 2, or 3, close up lens. Then replace the glass plate and O ring and begin to shoot. Remember, however, that your depth of field has been cut down and choose subjects that are within that range. For good slides comparable to the Rollei, use Ektachrome Professional film 620, with an ASA of 50 to 64.

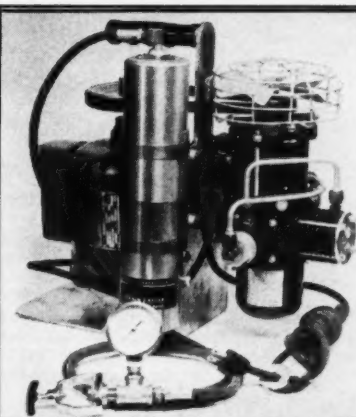
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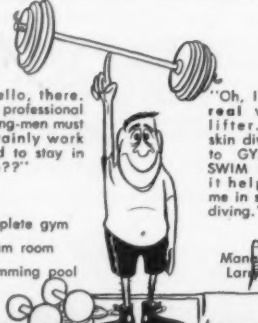
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A Diver's Dream . . . Eldon Robbins (left) of Evinrude Motors stands by as John Gaffney, Skin Diver Magazine, checks out gear before a dive into the huge tank at Marineland of the Pacific. Anyone else for a swim with Bubbles...?

Mexican Laws on Lung Diving Modified

By RAY CANNON

Modification of the laws restricting lung diving activities in the Sea of Cortez have been accomplished, principally through the efforts of Bill Escudero Lujan, Trans Mar de Cortez Airlines Executive and President of the La Paz Chamber of Commerce.

The original set of regulations were established to prevent poaching on black pearl-oyster beds, which may be worked only by a native syndicate that has the exclusive rights to harvest them. This group of divers planted, or rather replanted these beds.

Additional laws were enacted as conservation measures to prevent the depletion of slow growing shellfish that were being commercialized. Recent measures were passed to curtail commercialization and outright destruction of native fish populations. Especially the slow growing basses, large croakers, snappers, and snook.

While divers were welcomed as pleasure-seeking guests and shown every courtesy, some abused the privileges by wanton destruction of fishes that required 50 to 100 years to attain their large sizes. Among them—the groupers, black sea bass, jewfish, and certain snappers. Totuava and cabrilla were also being slaughtered in quantities by U. S. lung divers and hauled to U. S. markets.

Commercial fishing licenses issued to all foreigners cost up to \$3,000, and that is for pelagic fishes only. Violators may be fined amounts exceeding that figure, and have all boats, vehicles and equipment confiscated.

The laws that were recently modified effect only lung divers' captures. They may now take only the amount of fish they can consume, and that in the fresh stage and in the vicinity of the capture. The previous law prohibited taking any native resident species by lung diving.

The regulations prohibiting taking oysters and other shellfish still stand for all types of diving.

Much credit is due Escudero and Bonifacio Salinas Leal, Governor of Baja California Sur for prompt action in behalf of divers who find immense pleasure in the fabulous underwater world of the Sea of Cortez.

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Golden Isles Divers Quiz Expert On Sharks

Skin divers in Brunswick, Georgia, worried over sharks, decided to call in an expert. William W. Anderson, director of the federal government's fisheries research laboratory here, agreed to answer their questions about shark behavior. What he told them was hardly comforting:

Q: What kind of shark is it safe to be around?

A: A dead one.

Q: How fast can a shark swim?

A: Pretty darn fast.

Q: What should a diver do, if he's suddenly confronted with a hostile shark?

A: Now that's a good question.

The marine biologist acknowledged his answers were perhaps not what the divers wanted to hear. But, he continued, there isn't much else you can say with certainty—shark research is still in its infancy.

He did not hesitate, however, in saying this: don't dive if sharks are known to be present, and don't panic if a shark approaches you.

"Sharks are excitable and any sudden, sharp movement by the diver might provoke attack," he said.

Mr. Anderson declared skin divers who play around with sharks are taking their lives into their own hands.

"Sharks are unpredictable. I wouldn't trust sharks at all. You might dive around sharks a thousand times without incident, but it only takes one and you've had it."

Obviously, the scientist takes a dim view of divers who boast of pulling sharks' tails and other such antics. He also advises against spearing sharks—even small ones.

"If you don't completely incapacitate him, he's likely to turn on you and attack. And a shark is very hard to incapacitate. A completely eviscerated (gutted) shark can still swim a little while."

Mr. Anderson said that probably some of the approximately 300 species of sharks are safe, but no one knows for sure which they are.

Mr. Anderson has been a U. S. Fish and Wildlife Service marine biologist for nearly 30 years. He has made many cruises along the South Atlantic coast, in the Bahamas and the Gulf of Mexico conducting fisheries research.

His advice on sharks was given during a meeting of Golden Isles Scuba Divers, local skin diving club.

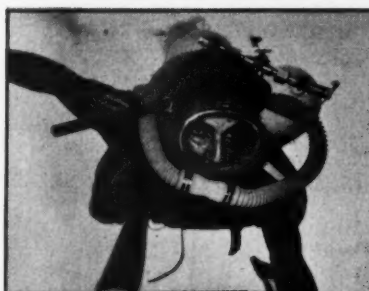
Richard's Aqualung Center Sponsors Two Contests

Richards is looking for America's oldest skin diver and the winner will receive the Nemrod Regulator, Snark II. A photo of the contestant ready for diving and date of birth should be sent to Richards Aqualung Center. To be eligible, contestant must be over 50 years of age. No entry fees or any other qualification necessary.

In the second contest, Richards will award a Nemrod Regulator, Snark III, to the owner of the oldest regulator (from any manufacturer) now in actual use. Contestant need just send the serial number on his or her regulator, date of purchase and name of dealer.

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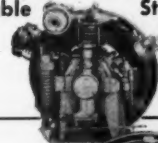
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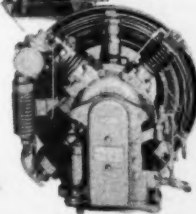


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(Continued from Page 65)

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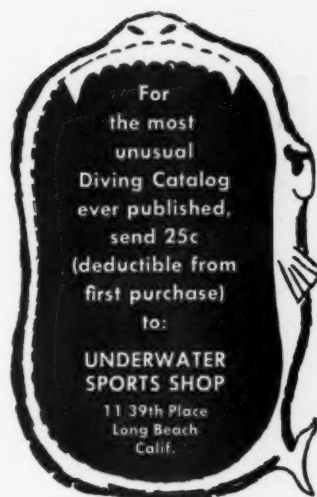


Giant Squid Captured by Divers

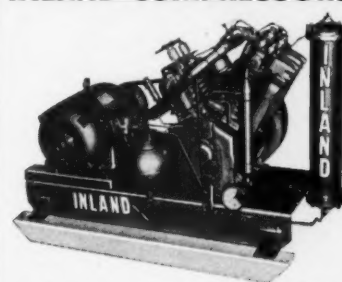
San Jose skin divers Jerry Stugen and Mike Evans captured this nine foot member of the giant squid family alive at Carmel, California recently. It is the second largest of three ever discovered in Pacific waters. Jerry Stugen, professional diving instructor of Stan's Skin Diving Shop in San Jose, disclosed that he and two diving buddies spotted the squid near the surface, just beyond extremely heavy surf and ground swells at Carmel Meadows. He stated that the fight was largely missing from the slippery monster, as its normal habitat is between 100 and 200 fathoms.

While the Giant Squid is known to be one of the largest creatures of the sea with an occasional overall length of 75 feet, the Architeuthis is rather a sluggish animal, living near the upper stretches of the continental slope. The structure of the suckers suggests that it does not deal with large or energetic prey. The noticeably small size of the fins and small muscle tissue suggests an inactive life, therefore capture on the surface is not difficult.

Stugen pointed out that sperm whales obtain their dinners, almost exclusively, of squid large and small. The whales possess a long narrow bony lower jaw, which can be opened at a 90 degree angle. Swimming at tremendous depths in the dark waters, the whale snaps his mouth shut when he contacts a squid. A 35 foot squid was once removed from the stomach of a 47 foot sperm whale off the Azores. Stugen noted that this specimen, although a baby as giants go, was one of the few taken whole and undamaged by sharks or other predators, and it now reposes in a pickling bath at the Hopkins Marine Station in Pacific Grove.



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DINING FOR DIVERS

by Allan Petrie

NOW THAT the abalone season is open,
it is time for the diver-chef to really
shine. A transplanted Italian fisherman in
Santo Thomas, Mexico, showed me a new
trick with pink abalone that is really worth
setting down for the record. Being from
Naples, he was most fond of an Italian dish
called "scungilli." Actually, scungilli, or
conch, is to the Italians the same delicacy
that abalone is to us. So, he prepares his
abalone in much the same way the Italians
prepare Scungilli Marinara. There is one
basic difference however. With scungilli,
you boil it until it is tender. You can boil
abalone if you want to, but all it will be
good for is patching a wet suit. So, he used
the old Japanese trick of cooking it in a
pressure cooker for about ten minutes. Then
he proceeded with the following ingredients:

Olive Oil
2 cloves of garlic
1 medium onion sliced
1 stalk of chopped celery
1 can of Italian tomatoes (pear shaped)
1 pinch of oregano
1 bay leaf
1 pinch sweet basil
4 pepper corns
1 cup red Chianti

Then he sliced the pressed cooked abal-
one and browned it very quickly in an iron
skillet with the olive oil, the onion, and the
celery. Then he added the tomatoes and
Chianti and cooked it for about ten minutes
over a medium fire. Then everything else
was added and cooked for about five more
minutes. Believe me, it is easy and really
great.

Here on the West Coast, one of our most
common ways of serving abalone is in a
chowder. For a beach party, it can't be beat.
All you need is a chowder pot, and of
course, a hammer for pounding the abs. (I
don't care what they say about empty wine
bottles, a hammer is better. And anyway,
by the time the wine bottle is empty, you
probably can't even see the ab!). So for the
ingredients you'll need:

1 lb. thick sliced bacon
6 abalone, sliced, pounded, and cut into
one inch squares
4 large potatoes, diced
2 onions, chopped
2 cloves of crushed garlic
sea water
1 lb. of butter
3 quarts of half and half

After the chowder pot has heated, add
the bacon and brown it lightly. Pour out
about 2/3 of the drippings (but don't dump
them in the fire—they burn!). Add the
the abalone, the onion, and the garlic. As
soon as the abalone is browned, which
should be about two minutes, add the pota-
toes and about two cups of sea water. As

soon as the potatoes are tender add the half
and half. Let it come to a slow simmer and
add the butter and salt and pepper. Serve
it hot! With abalone you have to remember
just two things. Cook it hot and cook it
quick. Slow frying is what makes it tough.
If chowder isn't to your liking, fried abal-
one can be prepared dozens of other ways.
For example, fried with a sauce made of
cheese and beer. I guess you could call that
Abalone Rarebit. Or stuff fried abalone
with crab meat and serve it with a pineapple
butter sauce. Or even try an Abalonebur-
ger. But no matter how you fix 'em, abal-
one are great.

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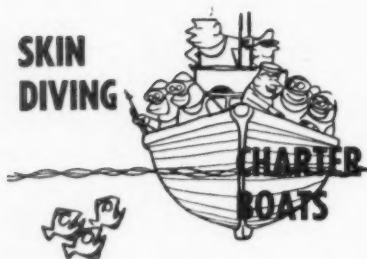
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It was calculated from the data that over 440,000 fish were caught. Conventional hook-and-line fishing accounted for 95 per cent of the effort (84 per cent was casting, 9 per cent was pole fishing, 2 per cent was spin fishing). Skin diving, mostly without scuba gear, accounted for 2 per cent; nets for 1 per cent; and the remainder by other methods.

For technical reasons, Pearl Harbor and Kaneohe Bay could not be included in the estimates. Thus, these figures are conservatively low if anything.

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